LISRC #386
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People and the Sound

SHORELINE APPEARANCE AND DESIGN

A Planning Report prepared for the New England River Basins Commission by the U.S. Department of the Interior National Park Service and Roy Mann and Associates

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New England River Basins Commission

The Long Island Sound Regional Study is a "level B water and related land resources study." It was conducted under provisions of the federal Water Resources Planning Act of 1965. The Plan which has been developed was prepared by a team of federal, state, and regional officials, local citizens, and the scientific community, under the overall coordination of the New England River Basins Commission. It is a part of the Commission's comprehensive, coordinated joint plan for the water and related land resources of its regio which includes New England and the New York portions of Long Island Sound.

The plan for Long Island Sound recommends a program for action by federal, state, and local governments; it does not bind them to undertake specific recommended actions. To assist in the evaluation and implementation process, the following reports have been prepared:

A PLAN FOR LONG ISLAND SOUND: A SUMMARY. Highlights of the plan and a brief discussion of the rationale leading to recommendations.

A PLAN FOR LONG ISLAND SOUND: SUPPLEMENT. A more comprehensive planning document which enumerates the major alternatives considered in formulating the recommendations, together with an explanation of how the plan was prepared, who did the work, and background information organized both by subject matter and by geographical sub-regions of the Study Area.

PLANNING REPORTS. Each planning report was developed by a "Work Group," chaired by a federal agency, with the active participation of state and local agencies, other federal agencies and citizen and scientific advisors. These reports incorporate data (originally published in a series of Interim Reports) which estimate people's demands for the resources of the Sound region, the requirements needed to meet those demands, the existing capacity of the region to meet the requirements, and any deficiencies noted.

The second half of each planning report develops solutions by stating objectives in terms of satisfying defined needs, suggesting alternative ways to achieve the objective, evaluating each alternative in terms of environmental, economic, and social criteria, developing economic, environmental, and composite plans, and finally making recommendations.

The following Planning Reports were prepared:

Water Management by the U. S. Environmental Protection Agency, and the States of New York and Connecticut.

Land Use by Ralph M. Field and Associates for the U. S. Department of Housing and Urban Development.

Outdoor Recreation by the U. S. Department of the Interior, Bureau of Outdoor Recreation.

Fish and Wildlife by the U. S. Department of the Interior, Fish and Wildlife Service; and the U. S. Department of Commerce, National Marine Fisheries Service.

Shoreline Appearance and Design by the U. S. Department of the Interior, National Park Service and Roy Mann and Associates.

Marine Transportation by the U. S. Department of the Army, Corps of Engineers.

Power and the Environment by Federal Power Commission staff.

Mineral Resources and Mining by the U. S. Department of the Interior, Bureau of Mines.

Flood Damage Reduction by the U. S. Department of the Army, Corps of Engineers; and the U. S. Department of Agriculture, Soil Conservation Service.

Erosion and Sedimentation by the U. S. Department of the Army, Corps of Engineers; and the U. S. Department of Agriculture, Soil Conservation Service.

OTHER REPORTS published in conjunction with the Study are:

An Economic Perspective by the U. S. Department of Agriculture, Economic Research Service; and the U. S. Department of Commerce, Bureau of Economic Analysis. An examination of the economic and demographic trends in the region, with data for use as the basis of all projections made in the Study.

Shoreline Appearance and Design: A Planning Handbook by Roy Mann Associates, Inc., for the U. S. Department of the Interior, National Park Service. Recommended management procedures for protecting and enhancing the region's scenic resources.

Sources and Movement of Water by the U. S. Geological Survey, Water Resources Division; and the National Oceanic and Atmospheric Administration. A summary of the hydrology and climate of the region.

Soils by the U. S. Department of Agriculture, Soil Conservation Service. An inventory and analysis of soil composition in the region.

For a complete listing of reports published by or in conjunction with the Study, see Appendix A of the Supplement. Copies of these reports are available from:

New England River Basins Commission
55 Court Street
Boston, Mass. 02108

National Technical Information Service
Springfield, Va. 22151

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SHORELINE APPEARANCE AND DESIGN

a Planning Report

Long Island Sound Regional Study
New England River Basins Commission
270 Orange Street
New Haven, Connecticut 06511

A Report Prepared by

Roy Mann Associates, Inc.
Cambridge, Massachusetts

for the

U.S. Department of the Interior
National Park Service

February 1975

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FOREWORD

Long Island Sound is one of the nation's unique and irreplaceable natural resources. An almost fully enclosed arm of the ocean, it has over 1300 square miles of water surface and over 600 miles of coastline. Spreading eastward along both shores from the great metropolitan center which lies at the Sound's western end, a growing concentration of increasingly affluent people make ever greater demands on this urban sea. At the same time, there is a growing feeling that the conflicting demands are destroying the Sound, and that the problems must be resolved if the Sound is to be preserved.

The Long Island Sound Regional Study is a comprehensive planning effort by the Federal government and New York and Connecticut, led by the New England River Basins Commission. Assisting the Commission are professionals from many disciplines representing the Federal, state and regional agencies listed on the back cover, a Citizen Advisory Committee, and a Research/ Planning Advisory Committee composed of members of the region's scientific community.

> THE GOAL OF THE STUDY IS TO PRODUCE A PLAN OF ACTION BY THE SPRING OF 1975 WHICH BALANCES THE NEEDS TO PROTECT, CONSERVE AND WISELY DEVELOP THE SOUND AND ITS RELATED SHORELANDS AS A MAJOR ECONOMIC AND LIFE-ENRICHING RESOURCE FOR THE 12 MILLION PEOPLE WHO LIVE NEAR IT.

This planning report is one of a series. The first half of each report is problem-oriented. It summarizes demands placed upon the Sound and adjacent lands, their capacity to supply these demands, and present or expected needs to be met, if it is determined that supply should meet demand. The last half of each report is solution-oriented. It formulates tentative objectives and alternative measures for achieving the objectives. It evaluates the environmental, economic and social implications of each measure and formulates alternative plans. One plan is tentatively recommended. The planning reports are printed and distributed before the final version of main report. Therefore, final recommendations are to be found only in the main report, scheduled for publication in the Spring of 1975. Planning reports in this series include:

Land Use	Recreation
Water Management	Fish and Wildlife
Shoreline Appearance & Design	Marine Transportation
Erosion and Sedimentation	Minerals
Flood Damage Reduction	Power and the Environment

SUMMARY

PURPOSE OF THIS REPORT. To assemble information on current and projected demand for and supply of scenic and cultural resources in the Long Island Sound Region, to delineate problems and needs, and to recommend ways in which the needs can be met in environmentally, economically, and socially acceptable ways.

HOW IMPORTANT ARE SCENIC AND CULTURAL RESOURCES TO THE LIS PUBLIC?

If we could think of quality of life as an equation consisting of several tangible and intangible elements, the availability of scenic and cultural resources would be two of the elements that figure prominently for the people who live in and visit the LIS region. Although it is hard to quantify the need for these resources in visitor days or in dollars, the need is expressed strongly by individual and group actions such as campaigns to preserve historic and cultural sites, tourism, the recent boom in second home construction (many of which are situated to take advantage of an appealing view), and efforts to preserve open space. Demand is likely to increase as population, income, and leisure time increase.

WHAT IS REQUIRED TO SATISFY PEOPLE'S DESIRE FOR SCENIC AND CULTURAL RESOURCES?

Diversity in landform and pattern is a major determinant of scenic quality, providing that development harmonizes in scale with the landform and with adjacent development. Variations in forms, textures, colors, hues and tones also contribute to scenic quality. Other effects of sounds, smells, and movement can enhance or impair viewing enjoyment. Along with the physical attributes of the view, there is a requirement for numerous and varied and well-distributed points of scenic attraction. Finally, there is the need for access to areas of high visual quality.

The value of cultural sites or structures is determined by many factors, but especially the age, significance, uniqueness and condition of maintenance. The harmony of the site's surroundings is also important in preserving its integrity. As with scenic resources, cultural sites should be well distributed and accessible. Clusters of historic structures often have a value exceeding that of any of the individual structures. Their character can be destroyed through removal of even one of the less distinguished structures.

HOW DOES THE SOUND REGION MEASURE UP TO THESE REQUIREMENTS?

The scenic quality of the Long Island Sound shore viewed from the water is generally excellent, with few glaring eyesores, but development threatens to reduce existing quality by reducing diversity. Viewpoints on shore affording fair to excellent views are limited, with only 221 identified to date. The same pressure for development threatens these views, and could also destroy or block the viewpoints themselves. Several harbors contain stretches of unsightly, dilapidated or abandoned facilities.

The study has inventoried over 1300 cultural sites. Although these sites are abundant, well-distributed, and generally accessible, many of them are not well recognized and several are threatened.

WHAT ARE THE MAJOR PROBLEMS?

- Loss of diversity along the shoreline.
- A scarcity of accessible viewpoints, particularly in subregions 4, 5, 6 and Long Island.
- Poor quality captive views.
- Harbor aesthetics, which require a framework of development and protection to maintain diversity while replacing obsolete facilities.
- Lack of an effective mechanism for influencing the siting and design of very large waterfront facilities.
- An abundance of cultural features which exceeds the present capability for cultural site preservation.
- Lack of public awareness of many significant cultural sites.
- Prevalence of a "new is good" assumption that tends to undervalue cultural sites.
- Immediate threats to several significant cultural resources.
- Lack of tools to incorporate design standards into all development decisions.
- Lack of institutional capability in the landscape architecture and design fields.

OBJECTIVES AND ALTERNATIVE MEASURES

The planning objectives are to preserve natural landscape patterns, to enhance appearance of development patterns, to increase access to the Sound and to the shore, and to increase public awareness of the region's scenic and cultural resources.

Forty-eight alternative measures were considered; they fell under the headings of twelve policy objectives: 1) preserve scenic natural landscape patterns, 2) conserve five outstanding scenic quality corridor areas, 3) incorporate design standards into development decisions, 4) protect scenic

townscapes, 5) ameliorate appearance of mediocre townscapes, 6) remove or ameliorate eyesores, 7) enhance appearance of large scale facilities, 8) enhance appearance of harbors and harborsides, 9) protect quality viewpoints, 10) improve public access to shore and viewpoints, 11) upgrade quality of "captive views", and 12) increase public awareness through education and discussion. The alternative measures under each objective ranged from maximum public action to no public action.

EVALUATION

All 48 alternative measures were evaluated in terms of 54 environmental, economic, and social criteria. Environmental concepts include: 1) basic environmental goal of measures for shoreline appearance and design management, 2) highest ratings for maximum levels of acquisition and regulations. Economic concepts include: 1) impossibility of quantifying aesthetic benefits in precise dollar terms, 2) measures for preservation and design control counteract market trends in short-term, 3) both public and private costs are incurred, especially in cases of public acquisition and mandatory design standards, and 4) these measures do yield long-term benefits in terms of concentration of population and industrial development. Social concepts include: 1) basic social benefits in terms of culture, recreation, and quality of life, 2) possibility of judicial involvement, and 3) difficulties of passage and administration for new regulatory mechanisms.

ALTERNATIVE PLANS

Due to the unique environmental orientation of all of the shoreline appearance and design alternatives, the formulation of Environmental Quality and National Economic Efficiency plans was not performed. Rather, a plan based on maximum acquisition, a plan based on maximum regulation, and a composite plan were formulated. The maximum acquisition plan produced the highest public costs; the maximum regulation plan produced the highest private costs.

RECOMMENDATION

The recommended plan (Composite Plan) will achieve high environmental quality benefits, with a balanced distribution of public and private costs, over a longer period of time than the maximum acquisition plan. The composite plan, will probably require a short-term (2-3 year) period of adjustment by private and public developers to new site availability patterns. It will also require minor additional capital and maintenance expenditures to ensure improved siting, design, and upkeep of facilities. In one sense,

therefore, the composite plan might slightly lower national economic efficiency over the short-term. In the medium term (5-15 years), improved land-use patterns, more efficient use of public facilities and infrastructure, and a more attractive region (important to tourism/recreation and other industries) could lead to a rise in national economic efficiency for the region. In the long-term, the beneficial effects of the transition period would tend to be replaced by the national economic trend.

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1.0 PURPOSE OF THIS REPORT

The purpose of this planning report is to assemble information on current and projected demand for and supply of scenic and cultural resources in the Long Island Sound region, to delineate problems and needs, and to commend ways in which the needs can be met in environmentally, economically, and socially acceptable ways.

To accomplish its purpose, the first half of this report is problem oriented. It:

- examines the current and projected need for visual and cultural resources
- outlines major requirements that must be met in satisfying this need
- describes available scenic and cultural resources
- identifies some major unresolved problems

The second half of the planning report is solution oriented. It:

- formulates objectives
- identifies alternative measures for achieving the objectives
- evaluates the alternatives environmentally, economically, and socially
- states that all alternative measures are intended to achieve environmental quality, but that most, if not all, would also contribute to national economic efficiency in the long term through achievement of desirable regional land use patterns and improved community quality
- formulates three alternative strategies-maximum reliance on public ownership, maximum reliance on public regulatory control, and a composite approach for shoreline appearance and design management
- recommends a plan and adjusts it to accommodate multi-purpose considerations and public input

2.0 HOW IMPORTANT IS THE QUALITY OF THE SCENIC AND CULTURAL RESOURCES IN THE LONG ISLAND SOUND REGION TO THE PUBLIC?

2.1 Scenic

Demand for scenic quality. The need for scenic quality has only recently become a subject of formal study. Demand projections for scenic quality are new, and the subject is enormously complex. While scientific analysis and experimental studies have been conducted, and more are in

progress, no objective method for determining need or demand for scenic quality has yet evolved. Yet, there is general agreement that visual quality is needed. We know that environments which display a strong attractive visual image to the observer do much to add character to the scene viewed and provide a sense of identity to the viewer. There is also increasing evidence that environments which exhibit strong visual relationships, i.e., urban communities with focal points and landmarks or rural areas with strong natural components, heighten the sense of community identity and awareness of one's surroundings. These attributes, in turn, may reinforce the individual's sense of well-being and appreciation of his living environment.

There are, of course, numerous measurable indicators of the importance of both visual quality and cultural sites to the public. While it is not possible to assess scenery as a motive in human actions, desire for scenic quality plays a role in several noticeable and measurable phenomena. Among these are:

- Sharply rising attendance at such scenic and cultural attractions as the Valley Railroad and Mystic Seaport.
- Proliferation of restored or enhanced historic and cultural complexes, such as Mystic Seaport, and Stonington, Sturbridge and Bethpage villages.
- Rapid growth of tourism and second home development in particularly scenic areas.
- Increased awareness of the vital importance of natural systems evidenced by wetlands preservation legislation, and public acquisition programs, and by the unprecedented state and town cooperative effort now underway to preserve the Gateway area of the Connecticut River Valley.
- High and spiralling values of shore-front property, even when such property has no beach.
- The tremendous growth in popularity of hiking, cross-country skiing and camping.

All of these trends are indicative of the importance attached by the public to scenic quality. In the long run, the best indication of the importance assigned by the people of the Long Island Sound region to visual quality will be their willingness to attempt to preserve and enhance this quality within the study area.

Definition of scenic quality. The dictionary definition of scenery - "the general aspect of a landscape, the array of impressive natural landscapes and imposing features of a particular place" - is perhaps generally acceptable, but an attempt to get agreement on more precise adjectives than "impressive" and "imposing" is likely to generate disagreement.

The often quoted statement that "beauty is in the eye of the beholder" suggests the high degree of individual variance that exists among people's perceptions of scenic quality. There is, of course, considerable agreement on the extremes of the landscape continuum. At one end, there is

agreement on the quality of such outstandingly unique areas as the Adirondacks, the Maine Coast and the Grand Canyon. On the opposite end of the spectrum there is some agreement on the ugly and negative qualities of mined out sand and gravel pits and junkyards. Between the extremes of uniquely beautiful and insultingly ugly is a considerable area of middle ground where subjective responses vary considerably.

It is within this middle ground that an effort is being made to define landscape quality. In general, this effort is based on two approaches, one based on the landscape, one based on people's reaction to it. In one approach, landscapes whose high visual quality is generally agreed upon are analyzed in an effort to determine what specific attributes in that landscape make it attractive. In the other, people's reactions to various landscapes are measured and studied in an effort to identify those visual elements which appeal to or offend the viewer. This effort has not yet achieved results. However, work to date indicates that in general, diversity in landform (topography) and pattern (the interplay of different land uses) is a major determinant of scenic quality, providing that development harmonizes in scale with the landform and with adjacent development. Thus, a view in which a variety of landforms (bluffs, flatland, hills) and pattern (villages, meadowland, water, marinas, residential subdivision) appear is usually more appealing than one in which there is less variation in form or pattern. However, both the Grand Tetons, where landform is everything and development or patterns nothing, and the lower Manhattan skyline, where the reverse is true, are visually stimulating.

In any view in which the works of man are present, the degree to which these works harmonize with the landforms and with each other is an important determinant of scenic quality. As an extreme example, the Empire State Building is an important contributor to the quality of views of the Lower Manhattan skyline, where it is in scale with neighboring buildings. Placed, for example, in Old Saybrook, it would be viewed as a visual misfit lessening the quality of those views in which it appeared. The topographs, or landform, of much of the Long Island Sound Study area is relatively less significant in determining visual quality than is development or pattern. Hence, sensitivity in designing and locating developments is essential to maintaining the visual quality of the Sound shoreline.

Trends in scenic quality. Population within the study area and immediate vicinities is projected to increase more than 70 percent by the year 2020. An increase of this magnitude has major implications for the maintenance and enhancement of scenic or potentially scenic areas and cultural sites. In the absence of planning measures to properly direct growth within the region, we can forecast some future trends:

- Increased pressure to encroach upon and develop existing shoreline lands within an overall context of increasing public need to use the land/water interface for industry, housing and recreation. The development of open shoreline lands will reduce pattern diversity with strong tendencies

to block existing views and to introduce new and possibly disharmonious elements in those views which remain open.

- The continual escalation of land values, proportionately higher at the water's edge, will increase the tendency to use shorelands more intensively in order to offset initial higher land and construction costs. In the absence of design and appearance controls, this will lead to the construction of more high rise buildings and other intensively grouped developmental forms out of scale with surrounding landforms and patterns. This will mean the loss of opportunity for other users and viewers to enjoy the Sound. It will also increase pressures to demolish historical buildings not in public ownership so that their sites may be more intensively developed.
- Demand for access to the Sound will increase with added population concurrent with other needs. Privately held open shorelands are vulnerable to development pressures and ways should be sought to preserve existing access points.
- Energy consumption will increase, necessitating more of the bulky facilities (electrical generating plants, port receiving facilities, oil storage areas, etc.) which, in the absence of proper design considerations, could result in severe degradation of visual quality.

Importance of views. Two self-evident aspects of scenic quality should be mentioned. First, regardless of how beautiful a landscape may be, it does not benefit people unless they can see it. Second, many ugly landscapes are inescapably viewed by many people, and have an unmeasurable but very real psychological effect.

One important category of view that we are daily confronted with as part of our normal living pattern is the captive view. Such views exist within transportation corridors and places where we live, work and shop, and are in a sense inescapable. In most cases the captive view is at the low end of the scale of visual quality, particularly where the northeastern seaboard cities are concerned. Typically, the primary transportation corridors, both highway and rail, are besieged by heavy mixed concentrations of industrial, commercial and residential land uses that conjure up impressions of chaos, confusion and clutter to inhabitants and visitors alike. Compare the quality of the visual impression gained on the various major road surfaces throughout the Sound: the quality of the eastern portions of I-95 versus the western portions; the visual quality of the Long Island Expressway versus that of the Northern State Parkway. Whether it is a poor view from a traffic way or apartment window, people have no choice; they are exposed to the view regardless of its beauty or ugliness. Considerable attention might be employed to find measures to improve this class of views: first, to enhance the visual quality of the environment within the viewing corridors which we are exposed to as part of our daily routine, and second, to better what may be the principal

or only impression gained by visitors to the region.

Another class of views is that which requires the potential viewer to seek it out - views available from little-used public roads or from public lands which are somewhat out of the way. Such views may not be enjoyed by many people, but knowledge of their existence and availability is significant to those exposed to the sometimes repellent captive views.

Third, there are views which are not generally available, usually because the viewpoint is privately owned, occasionally because it is phyisically difficult to reach. Such views obviously are not represented in the inventory, and their number, location and quality are not known. They do represent the one source for augmenting access to scenic resources in the region and should be considered in the public decision-making process.

The latter two classes of views may be significant to people because in spite of how infrequently they are viewed, there are at least psychological reassurances connected with the knowledge that these relatively unattainable or out of the way views do exist. Many people will conjure images of favorite remote places that are important refuges within the mind's eye. Typically such scenes are in stark contrast to the predominantly harried man-made world we live in.

Several recent studies suggest that when viewed in a natural setting that is held more or less constant, landscape scenic values improve with increasing landform or land use diversity. In general, there is also an overall preference for natural landscapes over the more man-made landscapes. Such findings, though inconclusive, indicate declining scenic value with increasing man-made urban and industrial landscapes, particularly if the evidence of man's presence consists of structures in the landscape rather than managed landscapes such as farms. For most of us the negative aspects resulting from our daily exposure to an increasingly man-made environment is somewhat relieved by the knowledge that more natural landscapes still prevail and are available to us.

Finally, there are the many views of the shoreline from the waters of the Sound. Seen from the deck of a boat, the view of the shoreline is of relatively high quality. Something in this viewing aspect minimizes that which would otherwise appear as a misfit, such as a deteriorated harbor. Only egregious disharmonies of scale noticeably detract from visual quality. There is much diversity present in existing shoreline patterns that must be carefully preserved if high visual interest is to be maintained.

2.2 Cultural

Importance of cultural sites. Cultural sites are important for one or more of several reasons. First, they can be effective educational tools, illustrating at full scale ways of life or industrial processes in a way that no history book possibly can. Not even Melville's immortal

Moby Dick can provide quite the experience that a visit to the whaling vessel Charles W. Morgan at Mystic can provide. Second, they provide a sense of history and tradition - a tangible reminder of significant past events. The town greens which grace so many study area towns, with their Civil War or World War I cannon, their honor rolls and their bandstands, not only remind the present of past sacrifices, but are tangible links with a simpler time when the weekly town band concert was a major event in the social and cultural life of the town. While not often thought of in this context, old cemeteries provide a similar link with the past.

Third, historic structures or structures of architectural distinction add character to a scene, differentiating one locality from another. No one standing within sight of New Canaan's Victorian Gothic railroad station could doubt in what city he was, whereas most modern shopping centers look the same whether they are in New Canaan or Terre Haute or Santa Fe.

Future trends. Unlike the sections of this report dealing with visual quality, these sections dealing with cultural sites do not focus on Sound-related sites. Rather, they focus on sites anywhere within the study area which are (1) of such significance as to be listed on the National Register of Historic Places, or (2) are under-recognized or threatened.

Present trends within the study area will increasingly threaten cultural sites, as noted in the discussion of future trends, affecting visual quality (page 3). However, other trends are more favorable.

First, the growing interest in preservation will help to assure preservation of sites and structures which figured largely in the development of the nation, state, and region. Second, there is a growing trend to recognize the significance, not just of battlefields, houses where Washington slept, and the homes of statesmen and generals, but also of the mills, railroad stations, and the homes or studios of artists and writers which influenced the form of our nation. Further, there is an increasing awareness that the 19th and 20th centuries are as much a part of our past as are the 17th and 18th centuries, and that sites and structures dating from this more recent past may also be worth preserving.

Third, there seems to be a growing awareness that the effectiveness of a preserved site can be reduced, if not destroyed, by adjacent incompatible development. The controversy over the tower now being erected adjacent to Gettysburg Battlefield and the National Cemetery dedicated by Abraham Lincoln in his Gettysburg Address is an example. It is an example, too, of the pressure for development which increasing population and prosperity will place on lands adjacent to cultural sites.

Finally, there is an increasing awareness that buildings may be worth preserving, not because of the fame of someone who lived in them, or because great events took place within their walls, but simply because of their visual appeal and the character they add to their locale. Accompanying this trend has been an increasing recognition that a group of structures

individually undistinguished can collectively produce an effect well worth preserving.

It is likely that these trends will continue, perhaps with increasing awareness of the desirability of preserving a broader range of cultural sites: factories, mill housing, early 20th century soda fountains, early gas stations and so forth. Hopefully, these trends will evolve, not into an attempt to save every old building, but into an ethic which will weigh the unquantifiable but tangible benefits of preservation equally with short-run economic considerations. Or better yet, they will evolve into an ethic in which full consideration will be given not just to short-run economic benefits, but to all short and long-run benefits and costs, be they economic, social, environmental, or psychological, in all planning and land use decisions.

3.0 WHAT IS REQUIRED TO SATISFY PEOPLE'S DESIRE FOR SCENIC AND CULTURAL RESOURCES?

3.1 Scenic

While the fact has been noted earlier, it bears repeating that what constitutes a pleasant scene and how much pleasant scenery people need are at best still imperfectly understood, and subject to a large measure of subjective judgement. Efforts to reach a higher level of objectivity are a continuing part of this and other studies, but completely or nearly completely objective systems of measuring scenic quality and demand are not soon to be expected. Moreover, individual reactions to scenery are tempered by complex intellectual and emotional responses that elude scientific measurement. However, there should be general agreement on certain key requirements for satisfying people's desire for scenic resources. First, to be satisfying the visual resource must have positive features - features which create pleasure in those who view them. Second, the scenic resource must not have negative features - features which repel the viewer. Third, if the people's desire for scenic resources is to be met, people must have access to such resources.

Positive features. In a general and perhaps familiar sense, most scenery exhibits positive features that enhance the viewer's appreciation either as single elements in a view or as compositional elements interrelated with other elements so as to increase quality. The problems and variables related to the measurement of quality view makeup preclude the use of simplistic formula approaches. The greatest variable is the individual viewer. Our individual attitudes, backgrounds, experiences, aspirations, and value ranges strongly affect our perceptions and reactions to landscape scenes.

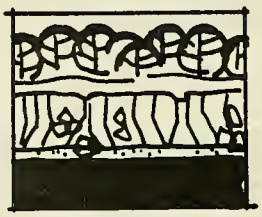
Research on the subject of visual perception has only become a serious undertaking since the mid-1960's. Extensive research is now being

conducted at several universities to measure individual and group responses to various real and simulated landscape models in an attempt to learn more about the types of environment people prefer to live in. Recent state of the art assessments in this field are inconclusive, since measurements of these perception responses are too varied to provide a useful planning tool for ranking scenic quality preferences.

However, certain components within perceived landscapes that unquestionably add to quality in the landscape can be identified. Diversity is the principal contributor to viewer interest in a scene. Diversity occurs on the shoreline in landform pattern types, i.e., flatland, rise, bluff

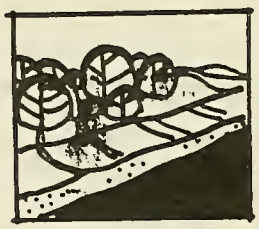
FLATLAND

RISE



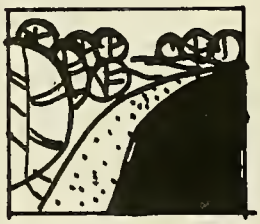
BLUFF

or shoreline configuration, i.e., straight, outward, inward.
or shoreline configuration, i.e., straight, outward, inward.



STRAIGHT

OUTWARD



INWARD

The presence of pattern and configuration types often determine the man-made use pattern and development along the shore. This structural cover ranges in diversity from preserved estuaries and bluffs where little or no development occurs, to the extensively developed embayments or river port cities, such as Bridgeport, New Haven, Norwalk.

Man-made diversity is viewed in its fullest range in greater or lesser scale within most of the Sound's harbor and port facilities. Such diversity as provided within such harbor zones should not be overlooked for its potential to create new scenic opportunities.

On a lesser scale, forms, textures, colors, hues and tones contribute to landscape diversity.

The presence of water is most certain to be a foolproof element

to add to viewing interest in a landscape with its capacity to reflect light conditions, respond to other elements, support life and many activities that are often related to movement and idyllic beauty. This valuable aesthetic medium is, of course, a resource with which the region is blessed.

In some cases an immense field of view or panorama (e.g., the high sand bluffs between Mattituck and Port Jefferson, Long Island and the estuary views from points upstream on the Blackhall, Thames, and Connecticut Rivers in southeastern Connecticut) can compensate for a lack of diversity. Views which lack diversity in landform or pattern (which in large part determine the presence or absence of other diversities such as form, texture, and color) can have added interest when strong natural or man-made objects appear such as bluffs, headlands, water towers or industrial stacks rising out of a moderate shorescape silhouette. Usually a harmonious blend of any scene's constituent parts is a highly significant factor that renders the compositional effect pleasant to the viewer.

Absence of negative features. The absence of discordant or disharmonious features is essential to scenic quality. Upon close examination, the visual elements within a pleasant scene are in a comfortable and harmonious relationship to each other. Discord is created by the introduction of an element essentially in tension with the scene's prevailing features. Sometimes such tension, when carefully designed, will enhance and heighten a particular landscape scene. Tension, of course, may be allowed to overpower a scene when the element introduced is grossly out of scale or opposed in form to the blend of the scene's prevailing elements, or strictly out of character with the predominant theme or use of the particular landscape. Such disharmonies can exist in the use of materials, textures, colors, and landscape management practices that offend the viewer's sense of the fitness of a particular object in the scene viewed. Consider the erosion-prone bluffs on Long Island's north shore between Mattituck and Port Jefferson. The extreme vulnerability of this extensively exposed shoreline to erosion from shore processes and ground water seepage from behind the bluff face call for the strictest of development controls. The presence of vegetative cover on the bluff face and the bluff crest forms a natural deterrent to halt the rate of erosion. Yet man has seen fit to clear the shrub and tree cover from the bluff tops to create a homesite and to strew this debris over the bluff face - in a crude attempt at stabilization. In some instances man has reshaped and pushed out the contours of the bluff face into the Sound to create platforms for his residences with unimpeded views to the water. Here, the fitness or the order of the bluff environment has been clearly and unwisely offended by man's modification of contour and vegetation at eventual risk to his investment. When viewed from offshore, such landscape modification practices on the shorescape stand apart as visual misfits.

Derelict or rundown facilities at the water's edge are anomalies. Elsewhere, while unkempt man-made structures generally diminish visual quality, at the water's edge dilapidated wharves, piers, boats or other marine related equipment often add considerable character and interest in harbor views. The combined ability of water at land's edge to synthesize these derelict objects

attractively is related to its capacity to unify these smaller objects in a context of a larger prevailing medium, thus absorbing and enhancing the effect of these objects. A second great unifier on the shoreline is vegetation which dominates and screens most development (particularly residences) to a misleading, yet attractive, degree for the offshore viewer. Still a greater visual unifier to the offshore viewer is the sky in its infinite varieties of form, patterns and colors.

Number and distribution of views. It can be highly misleading to quote figures on the number of good or poor views in an area without respect to their distribution and proximity to people concentrations. People enjoy and appreciate attractive or interesting scenery wherever it is. Therefore, it is clear that people prefer abundant scenic quality and somewhat even distribution. It would not be sufficient to preserve all scenic and undeveloped shore in the eastern end of the Sound and none in the western. Nor would it be sufficient to maintain and enhance only those views removed from people concentrations. Since urban dwellers are afforded precious little access to the rural and suburban shores of the Sound, emphasis must be given to providing stimulating scenic opportunities in close proximity to their homes or jobs. Amelioration of disharmonious development features, which tend to be concentrated in this same urban zone, is also needed.

Access. It goes without saying that maintenance and enhancement of scenic views is important to the public only if the public has the opportunity to enjoy the views. The three types of views from land described earlier - the captive, the remote or out-of-the-way, and the unattainable - are defined by their varying accessibility. The principal opportunity for supplementing the existing views is in providing new access to presently unattainable views, be they urban or exurban. This may simply require rerouting a road, establishing a promenade, creating a rooftop restaurant or public recreation space on buildings with panoramic views, purchasing new waterfront public open space, or one of several other possible devices.

Other aesthetic assets. Although this report focuses on appreciation of one's environment as perceived by the eye, the other senses can play a significant part in our appreciation of a scene. The smells of the sea and salt marsh are generally stimulating. On the other hand, the odors of a mud flat at low tide or a factory's air emissions may be offensive and greatly diminish appreciation of an otherwise high quality view.

Quietude is another attribute people enjoy when they are on the water. While the Long Wharf area of New Haven Harbor has potential as a highly scenic viewpoint, the proximity of the Connecticut Turnpike and abrasive truck noises seems to deter people from stopping there.

Aesthetic enjoyment also comes from the consistent breeze at the water's edge and the addition of movement to a view, except if in conflict with the dominant water-related activities. Thus, in a small harbor

where recreational boating is especially popular, an oil tanker might seem a disharmonious intrusion. Careful planning is required to ensure a harmonious blend of human and other activities.

3.2 Cultural

Site quality. Since cultural sites are important for several different reasons, it follows that site quality is determined by several different factors. The first of these is significance, and can be determined with a degree of objectivity. If the site or structure is associated with an individual or an event, did that individual or event contribute importantly to the nation's history (Washington's headquarters), the state's or region's history (Yantic Leap), or the locality's history (the Octagonal Building in Mattituck). As a rough guide, any cultural site administered by the National Park Service or any registered National Historic Landmark is significant in the nation's history and hence of the national concern; any site administered by a state agency or listed on the Register of Historic Places is of at least state of regional significance, and any site administered by a local organization or listed on a State Historic Preservation Plan is of at least local significance. Those sites and structures administered by the National Park Service or state agencies, or which are National Historic Landmarks or are listed on the National Register of Historic Places are identified on an inventory of 1,300 known cultural sites in the study area available in the Northeast Regional Office, National Park Service.

Second, the site may be representative of a life style or an architectural style. In these cases, significance can be determined by how significant the life style or architectural style was, how well the site represents it, and how many other representatives remain.

While not determinants of significance, other factors bear on the question of preserving a site. How much has it been altered? Have its surroundings changed? What is its physical condition? Can it perform an educational role which cannot be performed as effectively at another site by another medium?

One aspect of site quality is that of clusters of historic structures in close proximity to each other. Such clusters often have a value which exceeds that of any of the individual structures. They are frequently a significant visual and cultural asset, distinguishing their locale from any other. However, their character can be destroyed through removal of even one of the less distinguished of their constituent elements. Where such clusters survive, their preservation through such techniques as historic district zoning should be carefully considered.

Another significant factor to be considered in site quality is the site surroundings. Generally, the less the surroundings have changed, the more effective the experience produced by the site. However, structures notable for their architecture survive a change in surroundings better than structures noted for their association with a person or event providing the new surroundings are not out of scale. Occasionally, a cultural site will only be accented by a change in its surroundings.

Finally, one caution in applying criteria of site quality. A decision to demolish or destroy a site, once implemented, cannot be reversed. Once a cultural site is destroyed, it cannot be recreated and have the same effect as the original.

Other factors. Other factors to be considered in determining what is necessary to satisfy people's needs include quantity, distribution and accessibility. Ideally, one or more cultural sites should be close by and accessible to every resident of the study area. While cultural sites are where they are, and cannot be created to meet a present need, virtually every town in the study area has at least one site of some significance, so that preservation of existing sites will meet these needs.

4.0 HOW DOES THE SOUND REGION MEASURE UP TO THESE REQUIREMENTS?

4.1 Visual

The Long Island shorescape and landscape lack uniquely outstanding scenic resources comparable to the shoreline of Maine or areas of the Pacific where the union of land and water is an awe-inspiring visual and emotional experience. In those rugged, wilder, spectacular coastal zones the dramatic interplay of natural processes overwhelm the senses, and the visual quality is so much related to a wilderness image that even the slightest presence of man's work intrudes.

While the Long Island Sound area does not possess the spectacular quality of a Maine or Big Sur coastline, it has its own unique regional identity and a subtle and civilized visual quality unique on the Eastern Seaboard. On Long Island, for instance, the pleasant and open character of the north shore is especially valuable when one considers the extent of development inland and the thrust of urban/suburban population pressing heavily into the Long Island landscape. Most of the Sound's open shoreline and embayments, while covered with varying degrees of development densities, utilize high standard practices of landscape design and management to unify development to the landscape. The careful and sensitive establishment of the estates and residences embellished the shoreline aesthetically on a vast scale. Whether accidental or contrived, the blend of development and landscape is so skillful that an ethereal effect is produced to the observer. Without this development the moderate relief and landform of this coast would tend toward monotony. In this coastline, the careful landscape and architectural treatment mutually reinforce and enhance the visual quality of the shoreline. This quality contrasts with that of the Atlantic seaboard southward of New York where topography flattens out and visual interest lessens markedly.

Long Island Sound shoreline. As a first step in inventorying scenic resources, the shoreline was intensively examined from a boat, and its characteristics noted and marked on maps. (For further explanation of the methodology employed, see Appendix A). Naturally, the visual boundary

of the shoreline from this vantage point was determined by topography - the top of the first bluff, hill or ridge high enough to cut off the line of sight.

It was determined that the shoreline as viewed from the water was of fourteen distinct types determined by three topographical forms (flatland, bluff and rise) and five patterns (no development, scattered dense development with industry). A fifteenth pattern, bluff with dense development, with industry, while possible, did not occur. Table 1 shows the extent of each of these types. Each pattern is also illustrated in Appendix B. The patterns found within each subregion of the study area are discussed in the subsection following.

Before proceeding with an analysis of the implications of these 14 visual types as far as scenic quality supply is concerned, certain points need to be made. First, each of the 14 types is modified by characteristics related to the type of shoreline, such as a rocky beach or a sandy beach, a wide beach or a narrow one, a salt marsh near shore or not. These charactertistics could not be considered in analyzing scenic quality because of the sheer number of different visual characteristics they add to the 14 basic types, but they contribute importantly to visual diversity. Second, one type is not intrinsically better than another from the standpoint of visual quality. Rather, it is the frequent change from one type to another as the boat skims by the shore which provides diversity and visual stimulation. Finally, and somewhat surprisingly, the coastal visual type seems to have no relationship to the quality of views from the land out to and over the Sound. Of course, flatland with dense development almost always provides fewer viewing opportunities than such other patterns as rise with scattered development or bluff with no development, but, generally speaking, the coastal visual type is of minor importance when viewed from the land out.

At present, the Long Island Sound shoreline, with its 14 view types further complemented by such characteristics as variation in beach width and composition, is visually diverse and, therefore, visually stimulating. However, with the region as a whole, there is only 0.95 mile of development with industry. Visually, the Connecticut and Long Island coasts are separate entities. The Long Island coast lacks the type rise with dense development and industry, has only 0.95 mile of flatland with no development, only 5.7 miles of bluff with scattered development and industry, and only 6.8 miles of flatland with scattered development and industry. Intensification of development of flatland and rise could eliminate three types, leaving only 10 types and reducing diversity.

Connecticut lacks bluff with no development, flatland with no

TABLE 1 PRIMARY PATTERN OCCURRENCE IN LONG ISLAND SOUND STUDY AREA

PRIMARY PATTERN		MILES			RANKING IN LENGTH			FREQUENCY		
No.	Description	Long Island	Main-land	Total	Long Island	Main-land	Total	Long Island	Main-land	Total
1	Bluff/No Development	12.3	0	12.3	7	12	10	7	0	7
2	Rise/No Development	12.5	2.3	14.8	6	11	9	12	2	14
3	Flatland/No Development	.95	---	.95	13	12	13	1	0	1
4	Bluff/Scattered Development	34.1	3.0	37.1	2	10	5	26	4	30
5	Rise/Scattered Development	50.9	46.2	97.1	1	1	1	37	32	69
6	Flatland/Scattered Development	15.0	37.7	52.7	4	2	2	12	23	35
7	Bluff/Scattered Development Indu.	5.7	----	5.7	12	12	12	4	0	4
8	Rise/Scattered Development Industry	13.4	8.9	22.3	5	9	8	5	8	13
9	Flatland/Scattered Development Industry	6.8	18.9	25.8	11	6	7	7	13	20
10	Bluff/Dense Development	11.7	10.6	22.3	9	8	8	8	9	17
11	Rise/Dense Development	11.9	31.8	43.8	8	4	4	10	19	29
12	Flatland/Dense Development	15.7	34.1	49.8	3	3	3	8	26	34
13	Rise/Dense Development Industry	----	11.6	11.6	14	7	11	0	5	5
14	Flatland/Dense Development Industry	9.5	25.9	35.4	10	5	6	2	11	13

development, and bluff with scattered development with industry. It has only 2.3 miles of rise with no development, and 3 miles of bluff with scattered development. Visual diversity could easily be reduced from the present eleven types to only nine.

Long Island Sound shoreline by subregion. The Southeastern Connecticut Region is characterized by a number of estuaries which add to the diversity resulting from the presence of eight visual types (5, 6, 8, 9, 10, 11, 13 and 14). There is only one short stretch of bluff, and none of the shoreline is undeveloped.

The presence of the Connecticut River estuary and an irregular coastline add to the diversity of nine visual units (2, 4, 5, 6, 8, 9, 11 and 12) found in the Connecticut River Estuary subregion. Flatland predominates, with substantial amounts of rise and some bluff. The one short stretch of type 4, bluff with scattered development, on the coast could easily go to type 10, reducing diversity somewhat. The only stretch of type 2, rise with no development, on the mainland shore of Long Island Sound lies along the east bank of the Connecticut estuary, and is a very significant scenic resource.

The large estuary of New Haven Harbor adds diversity to the coastline of the South Central Connecticut subregion. Eight visual types (5, 6, 9, 10, 11, 12, 13 and 14) are present. There are only two short stretches of bluff; the rest of the coast is predominantly rise with flatland interspersed. This coast is marked by four rather long stretches of visual type 11, rise with dense development, in the area east of New Haven Harbor. These stretches are broken by three short and one lengthy stretch of types 5 and 6. Further development in these reaches could change them to 11 and 12, creating a very long stretch of rise and flatland, both with dense development, and virtually eliminating visual diversity from New Haven east to the Middlesex County line.

Within the Greater Bridgeport subregion, the shoreline is more than 80 per cent flatland, with less than 20 per cent rise. Of the rise, about one-third is with scattered development and the balance densely developed. Of the flatland, roughly half is with dense development, one-fourth with scattered development, and one-fourth with dense development and industry. While the seven types (5, 6, 9, 10, 11, 12 and 14) are well mixed, and some diversity is added by Bridgeport Harbor and the Housatonic Estuary, continued development could lead to a visually monotonous, urbanized coastline.

Within the Southwestern Connecticut subregion, flatland is interspersed with rise in approximately equal portions. Eight visual patterns occur (5, 6, 8, 9, 11, 12, 13 and 14) and numerous embayments and off-shore islands add visual interest. Approximately one-third of the coastline has a visual type based on scattered development or scattered development with industry. This coastline, too, could easily become monotonous if further development changes these types to dense development or dense development with industry.

Western Long Island Sound has a remarkably diverse shoreline. Although there are only two short (2 miles and 0.5 miles) stretches of bluff, the region has nine visual types. Added variety comes from the islands, the irregularity of the Westchester and New York City shorelines, and the long, narrow embayments of the Nassau County shore. Over three miles of shoreline in three separate sections (all on the south shore of the Sound) is rise with (little or) no development. Over half the remaining shoreline is rise or flatland with scattered development or scattered development with industry.

The Western Suffolk subregion shoreline is also diverse, with 12 visual types. Topography is roughly 40 per cent bluff, 40 per cent rise and 20 per cent flatland. Over two-thirds appears undeveloped or with scattered development.

The Central Suffolk subregion has five visual types. Most of the coastline is bluff, with about a mile of rise with dense development at the western end, and about three miles of rise with scattered development. Nearly six miles of bluff with no development occurs in three separated stretches; the remainder is bluff with scattered development.

Within the Eastern Suffolk subregion, bluff is predominant, with about equal parts of rise and flatland. About five miles of coastline have dense development, another five are undeveloped, and the remainder has generally scattered development. There are seven visual patterns.

Views from the land to the Sound. The extensive land/water interface of the Long Island Sound Region is a varied and diverse scenic resource of high visual quality. Yet its potential value to the public is limited by lack of access throughout the region. The variety of landform types, shoreline edges and development patterns cannot be discerned under present conditions of access, distribution and frequency. Throughout the Sound generally, publicly accessible views occur only every two miles. In a real sense, the great number of the Sound area's inhabitants and visitors have little opportunity to perceive the Sound in terms of an immediate locational identity, much less in its varied entirety.

The pattern of access and distribution to views is further complicated by the higher population densities located on the Sound's western half. Approaching the New York metropolitan zone, shoreline uses intensify and the urban character takes visual form in the dense clustering of industrial and marine related structures. Public opportunity to view the shorescape is both tenuous and arbitrary. Such urban shorefront scenes, although dominated by development, are filled with a variety of use, activity and continual movement that is visually arresting for many viewers. In such zones deliberate policies are needed to relate inhabitants to these visually exciting zones. There are scattered attempts to create views into the Sound, particularly in urban renovation zones where attractive promenades, esplanades and overlooks are added along the water's edge as an amenity for inhabitants. The parkway

system provides green corridor strips containing roads with bicycle/ pedestrian trails that border the shoreline for public use. An example of this can be found on the west side of Little Neck Bay, Queens, along the Cross Island Parkway.

As one moves eastward from the influence of the densely populated western portion of the Sound, the shoreline gradually takes on a more natural appearance due to a dense vegetative cover that diminishes the visual impact of shoreline residences. Exceptions occur where clustered urban zones are grouped around the estuaries and harbors in southwestern and central Connecticut. The visual impact of these cities usually is softened by tree cover at the shoreline and ridge in the background. Such a landscape is accented by intermittent building clusters. In the Long Island harbors the scale and magnitude of development is less extensive and lends interest to otherwise long stretches of tree covered shoreline.

As part of the visual and cultural resources inventory, the seven shoreline regional planning agencies were asked to identify views accessible to the public, and rank them as excellent, good, or fair. This data is summarized in Table 2. Of the 221 excellent, good and fair views charted by the regional planning agencies, 87 are from highways or bridges, 80 are views to the Sound from the shore, and 54 are scenic overlooks, views inland, views of picturesque villages or harbors, views of water bodies other than the Sound, or views from institutional or private residential lands. By subregion, the total of excellent, good and fair views are: Subregion 1: 48; Subregion 2: 31; Subregion 3: 23; Subregion 4: 23, Subregion 5: 34; Subregion 6a, b (Westchester, New York City): 37 and Subregions 6c (Nassau) 7, 8 and 9: 26.

Views and viewpoints are thus neither numerous in comparison to the region's population nor well distributed. Further, even limited development such as a factory, a shopping mall or even a billboard could block many of the existing views from highways, further accentuating the problem of access to scenic quality.

The greatest number of views to the Sound and related water bodies are available from roads and bridges traversing the study area. The 88 views of this kind are distributed widely, from the heavily traveled roads like the Connecticut Turnpike and U.S. 1 to the secondary roads paralleling the shore. There are few opportunities in the study area to classify a scenic road on the merits of having a number of recurring views into the Sound.

Long Island's North Hempstead Turnpike does offer numerous and attractive views into bays and harbors of the Sound, and is a heavily traveled road of varying scenic experiences ranging from outstanding to horrendous. In subregions 1 and 2, highly scenic roads are more associated with the numerous rural river valleys like the Thames and Connecticut Rivers where the characteristic charm of the New England landscape is more prevalent than on the Sound. Another characteristic feature of these regions is the presence of marshy landscape and vistas of streambanks and inlets surrounded by marshgrass and tidal mudflats. Much of the visual quality within these regions includes

TABLE # 2

PROMINENCE AND QUALITY OF VIEWS AND VIEWPOINTS

Subregion	Scenic Roads Bridges	Shore Views	Scenic Overlooks	Villages Harbors	Unique Inland Views	Institutional Residential Lands
1	1 E 12 G	5 E 16 G	1 E 1 G		12	
2	9 E 7 G 10 F	2 E 1 G		1 E 1 G		
3	1 E 1 G	11 E 3 G	1 E			
4	2 E 4 G 5 F	3 E 1 G	3 G		4 E	
5	2 E 3 G 1 F	8 E 9 G 2 F			1 E 4 G 2 F	1 E 1 G
6a,b	8 G 3 F	8 E 3 G		4 E 5 G 1 F		
6o,7,8,9	9 E 8 G 1 F 1 P	4 E 4 G				

Legend

E - Excellent
G - Good
F - Fair
P - Poor

views down the river valleys, the estuaries and the Sound. Old Route 9 on the bank of the Connecticut River is a highly scenic road threading the valley. Otherwise, there would be few examples of highly scenic roads affording both sweeping and intimate views in a frequent enough sense to classify as scenic.

Unimpaired shore views present a range of interpretations from the idyllic view over an estuary relatively free from developmental intrusions to a narrow corridor between industrial buildings where the busy workings of an urban waterfront are discovered. The data collected reflect that some 80 views from unimpaired vantage points immediately on the shoreline are available throughout the study area. The quality of these views was not consistently devalued by the extent of development in the field of view. Excellent and good views were recorded in many instances simply because they were panoramic and available in spite of the development quality within the viewing sector.

Most of these views were recorded because they possessed more than just a view over an open body of water. The specific nature of each view is recorded on forms and on slides which are too numerous to elaborate in detail. They typically represent views immediately adjacent to Long Island Sound from secondary roads, beaches, promontories, causeways, headlands, residential neighborhoods, and institutional lands. The field of view includes a foreground of river estuaries, bays, and marshes with an occasional quaint village present. The views are typified in subregions 1 and 2 by distant views over the Sound to Plum and Fishers Islands with Long Island in the background. The presence of rivers and the expanse of estuaries tend to enhance the visual quality of these regions.

In subregion 3 most of the shore edges provide southerly oriented vistas, looking outward to New Haven Harbor or to one of the numerous inlets and coves of the Sound itself. The perimeter points and man-made breakwaters with their lighthouses and markers provide the most common type of landmark. New Haven Harbor is influenced by an industrial land use, while the subregion's eastern shoreline offers less man-made intervention and more natural geographic elements. The western end tends more toward regularity with long stretches of sand beaches. Also visually important in this region is the influence of haze and air pollution which can totally blackout or slightly obscure view panorama and quality. Subregion 3 clearly has numerous opportunities to reclaim and thereby upgrade visual quality within its urban zone.

Most of the coastal area of subregion 4, Greater Bridgeport, is held privately and developed. Viewing areas in close proximity to the Sound are limited. Major views over water bodies in this region are found around the reservoirs. Access is restricted, however, although roads pass nearby. The central problem in this region is not the preservation of Sound associated views, but rather the restoration or reclamation of areas, particularly in Bridgeport Harbor, where various land uses are now intermixed and where a better visual sense of function is needed.

Subregion 5 displays many good views available to local residents

at public beaches. The numerous coves and harbors containing mud tidal flats and marshes provide points of land usually affording the observer a panoramic view of these embayments and the Sound. Many of the parks are located on such points. The availability of good to excellent views over inland water bodies is an important element of the region's visual quality. Saugatuck Reservoir, for example, offers excellent views from a nearby rural road.

Subregion 6a, Westchester County, has a number of well defined harbors and coves with rock and sand beaches usually associated with rock outcroppings at all tidal levels. The presence of islands is a characteristic element of views of the Sound, adding diversity and interest. The views available at Westchester County's Playland afford exceptional views to Long Island. This area contains a full range of natural and developed scenic features. Fine views associated with salt ponds and views into operating boatyards and marinas are abundant.

Subregions 6c, 7, 8 and 9, Long Island's North Shore, already exhibit a number of good views into the Sound and its harbors. This coastline lacks the overall development density of the mainland and has unparalleled opportunities to increase the public access to views of its land/water interface. Basically, this shoreline can be represented by five broad visual use patterns:

- The east end shoreline. Beaches with huge scattered boulders; forbidding, inhospitable bluffs with scalloped patterns of vegetation and erosion.
- Busy harbors with extensive recreational boating. Clusters of fisherman; racing sailboats with colorful spinnakers and bright hulls; crowded but cheerful. Manhasset Bay is typical.
- Heavy industrial harbors. Tugs, barges, power plants, smokestacks, extensive mining operation leaving scarred, mined-out terrain. Port Jefferson and Hempstead Harbors are examples.
- Rural estates. Neat houses with lawns sloping down to the water, large houses perched on hillsides, each house well hidden from the next by fine stand of trees.
- Summer cottages. Clusters of small houses popping up sporadically along the beach or at the foot of a bluff; others perched precariously atop the bluff with staircases zig-zagging back and forth across the steep face.

This discussion of scenic resources would not be complete without mention also of visually blighted areas around the Sound. In urban waterfronts around the Sound industrial development has generally been treated as the principal use, at least so that it appears to dominate all other uses. This attitude of deference to industrial development, as opposed to public recreation for example, has led to general neglect of the waterfront in most of the commercial harbors. The resultant accumulation of trash and refuse on the shorefront

especially in the wetlands and mud flats, creates an image of disharmony with nature. New Haven, Bridgeport and Norwalk evidence this type of neglect. Abandoned piers can also be found in these three harbors and in Eastchester Bay. Other disharmonious waterfront features include open storage of bulk materials, especially scrap metal - found in New Haven and Bridgeport; proliferation of petroleum products storage tanks - found in virtually every commercial harbor; some monolithic looking power plants such as those in Bridgeport and Port Jefferson; electric power transmission towers and lines, as in Bridgeport; the mined-out sand and gravel pits in Hempstead Harbor; and grounded barges, as in Stamford.

These evidences of visual blight can in most instances be lessened or eliminated.

4.2 Cultural

An inventory of historic sites was prepared by Natural and Historic Resource Associates under contract by the National Park Service. Based on an analysis of printed material and supplemented by field checking, this inventory lists nearly 1,300 sites and structures.

These sites are plentiful and well-distributed within the study area, and most are accessible by car from major population centers. Although quantity, distribution and access by road are not now major problems, they may become so if an active preservation program is not undertaken. Those units of local government in which such sites are fewest should give special consideration to preserving those which remain.

In addition to the inventory, each regional planning agency was asked to choose five sites (twenty in the case of Nassau-Suffolk) which deserve extraordinary notice due to their:

- Architectural, historical, archeological, natural or cultural merit;
- Endangerment due to present or probable development, decay, transfer or other events; and/or
- Lack of due public recognition.

These sites are shown on Table 3 at the end of the text.

5.0 WHAT ARE THE MAIN PROBLEMS?

Some of the problems that have emerged from this study indicate critical areas which deserve further evaluation and management emphasis.

Diversity. The visual quality of the LIS shoreline is strongly

dependent on the continued maintenance of diversity in the face of intense development pressures on the land/water interface.

Views. An overall scarcity of views and access to view points prevails throughout the Sound, particularly in subregions 4, 5, and 6 and on Long Island generally.

Captive views. In general, the quality and the character of views from the major approach corridors and transportation networks of this region is poor. There is considerable need to upgrade the quality of such views since this class of views is the one most frequently experienced by the majority of people.

Harbors. The harbor areas, embayments and estuaries are distinctive assets that satisfy numerous uses and will absorb the largest portion of the proposed industrial, commercial and recreational growth. Each harbor, embayment or estuary must be studied and considered within a framework of development and protection that will prevent the indiscriminate and uniform development of each harbor.

Major facilities. No effective mechanism exists for controlling the siting and design of industrial facilities so as to ensure that those that must be located by the shoreline will harmonize with the setting in a manner that adds to visual quality.

Townscape aesthetics. A number of village centers of great charm and visual quality exist, but could easily be destroyed by any but the most sensitive development.

Extent of cultural resources. In one sense, the extent of the cultural resources of the Long Island Sound area is a problem. Nearly 1,300 sites of at least local significance have been identified. Ways must be found to retain as many of these sites as possible in productive use if an appreciable portion is to be preserved.

Unrecognized sites. A multiplicity of sites also work to disperse and weaken public attention and concern until a recognized site is threatened, and that may be too late. In the meantime, significant but unrecognized sites may be destroyed simply because no one recognized their significance. Much more effort to focus public attention on the cultural resources of the study area is needed.

"New is Good" assumption. There is a tendency on the part of property owners, planners and perhaps the public at large to assume that new is automatically better than old, unless the old is clearly associated with persons or events of great significance. When this attitude prevails, little thought is given to whether preservation of the old is economically feasible and might enhance new development adjacent to it if retained. An effort is needed to awaken people to the potential economic, social and aesthetic values to be found in carefully thought-out cultural site preservation.

Immediate threats. Several irreplaceable cultural sites within the study area are under immediate threat. Unless action is taken now by their owners and by local government officials, these sites will be destroyed.

Lack of tools. Many of the efforts to improve appearance and design have been made through the mechanisms of zoning ordinances and subdivision regulations. More recently, regional and state review processes over environmental impact statements, plans, and actions in the coastal zone have been instituted but standards for design and aesthetics have not been made explicit. New tools are thus needed to incorporate design standards into all developmental decisions.

Lack of institutional capability. In addition, existing institutions are not adequately equipped to evaluate scenic resources and develop standards for aesthetic improvement. A need therefore exists to strengthen institutional capabilities in the landscape architecture and design fields.

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES

Sub-region	Site No.	Name	Description	Town	Uniqueness	Main-Tained	Access	Threatened	Comments
9	1	Orient Point Inn	Vacant 19th century inn	Orient Point	Typical	No	Excellent	Yes	Damaged, action urgent
8	2	Breknock Hall	1857 residence	Southold		Yes	Excellent (private)	Yes	Change in use imminent
8	3	Octagonal Building	c.1800 octagonal structure	Southold	Unique in Long Island Study area	At present	Excellent	Yes	Now a liquor store, alteration of exterior threatened
8	4	Ella Hallock House & Barn	c.1800's house and barn	Riverhead		No	Good (private)	Yes	
7	5	Rod & Gun Club	c.1750	Brookhaven		No	Good (private)	Yes	Owned by LILCO
7	6	Seldon Farm	c.1720	Brookhaven		No	Good (private)	Yes	
7	7	Catholic Child Care Society	c.1723-1750	Brookhaven		No	Good (private)	Yes	
7	8	Main Street, Port Jefferson	Complex fronting road, components date from 1850's	Brookhaven	Unique character	Yes	Excellent (private)	Yes	Historic district zoning rejected, road widening or bldg. replacement possible.
7	9	All Soul's Church	Church designed by Stanford White	Brookhaven	Rare	No	Excellent	Yes	Abandoned by congregation, new use not found.
7	12	Fort Salonga	Outline of Revolutionary War blockhouse captured by Americans in 1781	Smithtown	Unique in study area	No	Poor	Yes	Resource virtually unknown to town's people

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES (CONT.)

Sub region	Site No.	Name	Description	Town	Uniqueness	Main tained	Access	Threatened	Comments
7	10	Lefferts House	Stanford White design	Smithtown	Rare in study area	Yes	Good (private)	?	New owners, plans for property unknown.
7	11	Saint James/ Route 25A Area	Two dozen 18th & 19th century buildings	Smithtown	Eligible for National Reg.		Excellent (private)		Branch bank construction planned may destroy hist. bldg. and add disharmonious element.
7	13	Suydam House	Early 18th century house	Huntington	Rare	Yes	Good (private)	Yes	Threatened by proposed road widening.
7	14	Amelia Lloyd House	Late 1700 residence	Huntington	Eligible for National Reg.	Yes	Good (private)	Yes	Land zoned for business owner has rejected landmark designation.
6	15	Schenck House	c.1753 residence	Oyster Bay	Rare example of Dutch infl.	Yes	Good (private)	Yes	In route of proposed expressway.
6	16 18 17	Robert Colee House Valentine House R. Colee House	18th Century residences	Oyster Bay	All date from original settlement of Glen Cove		Good (private)	Yes	Owners have requested zoning change.
6	19	Old Great Neck Methodist Church	Gothic Revival Church	North Hempstead			Fair	Yes	Advanced for new church. Faces pressure for other use of site.
6C	20	Burton Mansion	1918 stucco chateau on 27 acre estate	Bayside		Up for sale	Good (private)	Yes	In densely populated area, on market, subdivision possible.
6A	23	Rye Playland	1920's amusement park	Rye	Rare in nation	Yes	Excellent	Yes	Continued operation should be encouraged Significance under-recognized.

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES (CONT.)

Sub-region	Site No.	Name	Description	Town	Uniqueness	Maintained	Access	Threatened	Comments
6A	21	Glen Island Park Casino	20th century, a reminder of "Big Band" era	New Rochelle	Unique in study area	Yes	Excellent	No	Same as above.
6A	25	Washington's Headquarters	c.1738 house, three times Washington's H.Q.	White Plains	Significant in region	Yes	Excellent	No	
6A	24	Square House	c.1720 tavern, substantially unaltered	Rye	Unique, Natl. Reg. property	Yes	Excellent	No	Deserves wider recognition.
6A	22	Marshlands Park	Nature preserve and educational center	Rye	Rare	Yes	Excellent	No	Deserves wider recognition.
5	29	Norwalk Islands	28 islands totaling about 247 acres	Norwalk, Westport	Rare	---	Poor (mostly pvt.)	Yes	Merit preservation as open space and for recreation.
5	28	Sheffield Island Lighthouse	1868 lighthouse	Norwalk	Typical, visual focal point	Yes	None (pvt.)	?	In private ownership.
5	30	New Canaan R.R. station	1868 Victorian Gothic	New Canaan	Unique	No	Excellent	Yes	A distinctive useful structure, preservation not assured.
5	27	Convent of the Sacred Heart	1902 Georgian style Mansion	Darien	Locally unique	No	Good (private)	Maybe	Vacant and for sale.
5	26	"Le Petit Triannon"	1910 replica of Little Palace at Versailles	Greenwich	Unique	Yes	Good (private)	No	Much under-recognized.
4	31	Fairfield Co. Courthouse	Sumptuous 1888 public building	Bridgeport	Irreplaceable	Yes	Excellent	Yes	Expensive renovation needed, but could be unique urban embellishment.
4	32	Captain John Brooke Sr. House	1788 home	Bridgeport	Nationally significant	No	Excellent (boarded up)	Yes	Boarded up, in Model Cities area.

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES (CONT.)

Sub-region	Site No.	Name	Description	Town	Uniqueness	Maintained	Access	Threatened	Comments
4	35	Indian Ledge Park	46 acre park with both historical and archeological value	Trumbull	Rare	Yes	Good	Yes	Threatened by reservoir enlargement & highway extension.
4	34	Pixlee Tavern	c.1700 tavern visited by Revolutionary celebrities	Bridgeport	Rare	Yes	Excellent (private)	Yes	Possibility of demolition for commercial dev.
4	33	Great Meadows	Largest salt marsh in region	Stratford	Unique in region	No	Fair	Yes	Under constant development pressure.
3	41	Ingalls Rink	Eero Saarinen's 1958 structure	New Haven	Significant in 20th Century architecture	Yes	Excellent	No	Should be more widely recognized.
3	36	Louis' Lunch	Reputed home of the hamburger	New Haven	Representative		Excellent	Yes	Represents a phase of our culture too often ignored.
3	43	Meigs-Bishop House	1690 red salt box	Madison	Extremely rare		Good	Yes	
3	40	John M. Davies House	1867 residence 3 story stucco	New Haven		No	Good (closed)	Yes	Owned by Yale.
3	39	Kingsley-Havermeyer House	Brick, two story	New Haven		Yes	Good (closed)	Yes	On site of proposed new college building.
3	38	John E. Bassett & Co.	Hardware shop, 1828	New Haven		Yes	Good	No	

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES (CONT.)

Sub-region	Site No.	Name	Description	Town	Uniqueness	Maintained	Access	Threatened	Comments
2	44	Connecticut River Estuary	The Connecticut Estuary up to Haddam-East Haddam	Old Lyme Lyme East Haddam Haddam Chester Deep River Essex Old Saybrook	Nationally siginficant scenic and cultural resource	Yes	Road not inadequate for intensive visitor use and should not be improved.	Yes	This is a most significant resource which could be irreparably damaged by over-development or by over-use. A state authorized 8-town compact to assure its preservation is being developed and deserves region-wide support.
2	47	Essex Village Center	An assemblage including many 18th century homes	Essex	Regionally significant	Yes	Good	Yes	Lack of historical district zoning could permit incompatible development.
2	48	Chester Hadlyme Ferry	One of two remaining ferries on the Lower Connecticut	Chester, Lyme	Rare	Yes	Good	Maybe	A highly significant regional amenity, imperiled by economic considerations
2	45	Watch Rock	Archeological site dating at least to 1500 B.C.	Old Lyme	Undeterminable unless scientifically excavated	No	Fair	Yes	Site zoned industrial.

TABLE 3 UNDER-RECOGNIZED OR THREATENED CULTURAL SITES (CONT.)

Sub-region	Site No.	Name	Description	Town	Uniquenesse	Maintained	Accese	Threatened	Comments
1	49	New London R.R. Station	An H. H. Richardson design	New London	Unique	No	Excellent	Yes	Threatened by demolition unless tenant can be found.
1	51	Lantern Hill	Wild and lovely 500 foot high hill, reputedly Revolutionary War signal station	North Stonington	Unique in region	No	Poor	Yes	Silica mining in process will destroy this feature.
1	50	Stonington Borough	A little changed 18th & 19th century port, currently supports Connecticut's only fishing fleet.	Stonington	Rare	Yes	Excellent	Probably	No zoning, planned sewer system will encourage development.
1	52	Yantic Leap	Scene of the massacre of the Narraganaett Indians in 1643, potentially an area of great scenic beauty	Norwich	Unique	Partially	Excellent	No	Presently blighted, City of Norwich has acquired falls and plans park on Hollybrook Island.

6.0 TENTATIVE PLANNING OBJECTIVES

The goal of the Long Island Sound regional study is to produce a plan of action by 1975 which balances the needs to protect, conserve and wisely develop the Sound and its related shoreland as a major economic and life-enriching resource for the 12 million people who live near it.

This goal can be attained by reflecting society's informed preferences for attainment of two overall coequal study objectives as established by the U.S. Water Resources Council:

1. Environmental Quality (EQ), which enhances the quality of the environment through the management, conservation, preservation, creation, restoration or improvement of the quality of certain natural and cultural resources and ecological systems.

2. National Economic Development (NED), which increases the value of the Nation's output of goods and services and improves national economic efficiency.

For this report on Shoreline Appearance and Design, the tentative overall planning objectives are:

- To preserve and enhance the appearance of natural landscape patterns within the regional viewshed.
- To protect and enhance scenic values of development patterns in shoreline areas.
- To increase opportunities for people to have pleasurable and leisurely physical and visual contact with the Sound and with the shore.
- To increase public awareness of the region's scenic and cultural resources through public education and discussion.

To meet these policy objectives, alternatives will be formulated and evaluated in terms of environmental, economic and social well being criteria.

After multipurpose plan formulation and public scrutiny, the tentative planning objectives stated above may be changed, and labelled as management goals.

Within this overall framework, twelve more specific policy objectives have been formulated, to serve as the basis for the generation and evaluation of alternatives. These twelve policy objectives are:

1. Preserve scenic natural landscape patterns, both inland and on the shore.

2. Conserve extensive and contiguous areas of rural and sparcely settled landscapes which exist either on the shore or as important hinterlands for residents and visitors with interest in the coastal zone. Five such "quality corridor" areas are:

    1) Connecticut shore and upper shorelands east of New London to the Rhode Island border,

    2) the "Green Triangle" between Branford and Old Lyme,

    3) portions of the Lloyd's Neck-Eatons Neck area,

    4) the Nissequogue Crane Neck area, and

    5) the Long Island North Fork, east of Wading River.

3. Incorporate planning and design principles and standards into decisions at all levels of government regarding location and appearance of all new development and redevelopment within the coastal viewshed (i.e., that area bounded by those topographical limits most commonly considered inland horizons as seen from resources and settlements acknowledged as of importance to the coastal zone cummunity.)

4. Protect the appearance of historic and architecturally vital townscapes.

5. Upgrade all townscapes of low or mediocre quality to meet new or revised high standards of quality in design.

6. Remove, ameliorate and prevent eyesores and incompatible intrusions.

7. Enhance the appearance of large scale facilities, even when located in industrial or commercial zones.

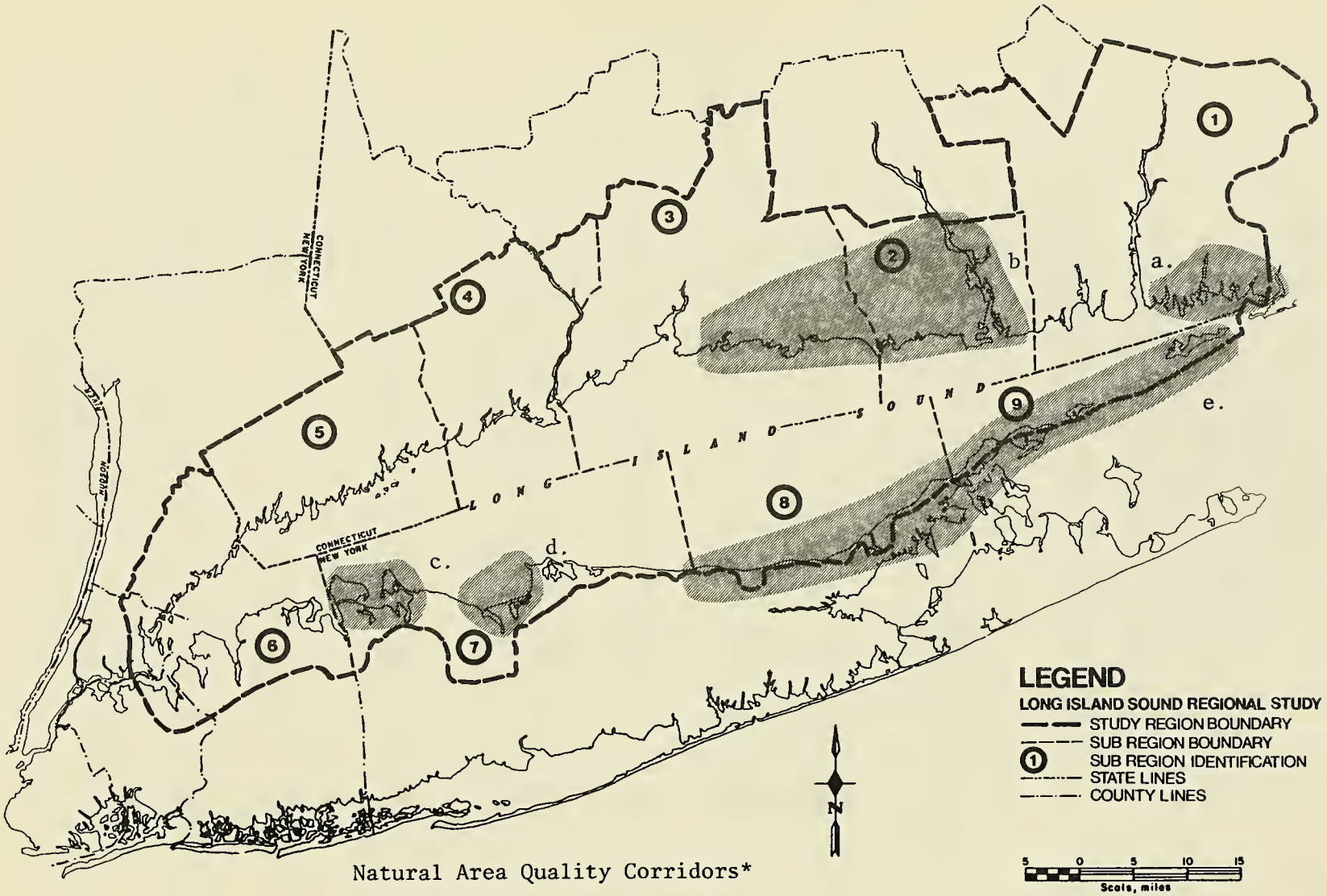
8. Enhance the appearance of harbors and harborside areas.

9. Protect and enhance all high priority viewpoints and adjacent areas important for view protection.

10. Improve public access to the shore and to high quality viewpoints.

11. Upgrade and maintain the quality of "captive views" along transportation and approach corridors.

12. Increase public awareness of the region's scenic and cultural resources through public education and discussion.



Natural Area Quality Corridors*

a. Mystic-Stonington-Wequetequock
b. Green Triangle
c. Lloyds Neck-Eatons Neck
d. Nissequogue-Crane Neck
e. North Fork

*shores, rivers, and streams not delineated

7.0 ALTERNATIVES

Under each policy objective several alternative actions are possible, ranging from the maximum amount of public action (i.e., acquire all high priority viewpoints), to no public action. These alternatives are listed below and specific alternative measures under each described.

7.1 Preserve Scenic Natural Landscape Patterns

A. Maximum use of outright acquisition and purchase of development rights in scenic areas:

- Outright purchase and management as public area
- Purchase and resale with deed restrictions
- Purchase of scenic easements or other development rights necessary to protect scenic character
- Non-profit agency acquisition (Nature Conservancy) or holding action until government can acquire lands

B. Maximum use of land-use regulations incorporating design controls:

- Statewide land use controls in coastal zone
- State or county review over local decisions in coastal zone or critical natural areas
- New state standards to govern local land-use controls
- New programs of transfer of development rights and land banking to protect open areas and control growth
- Local zoning - agricultural, conservancy district, floodplain, etc.

C. Combined program of improved regulations in all scenic areas and acquisition in high priority scenic areas.

- Establish balance between coastal zone management program under CZMA and acquisition of other areas outside coastal zone.
- Acquire multiple-use open areas and protect others through regulation

- Establish priorities for acquisition and depend on regulation for other areas

- Provide funds and new enabling legislation at the state level for local acquisitions

D. Rely on existing level of acquisition and existing forms of regulation.

7.2 Conserve Five Corridor Areas

A. Maximum acquisition of title and development rights in open and scenic lands in corridor areas

- Designate areas within corridors for state/bistate/ local and quasi-public acquisition

- Acquire scenic easements or development rights in selected areas

B. Maximum use of land-use and design controls in corridor areas:

- State level designation of management areas (i.e., Adirondack Park) with cooperation of local governments

- Substate regional compacts to regulate land uses in corridors

- Local growth control measures
    - agriculture, open space, conservancy district zoning
    - sewer and water moratoria
    - flood plain regulations
    - transfer of development rights
    - timed development regulations

C. Combined program of both accelerated acquisition and more stringent regulation in corridor areas

- Acquire high priority open areas and regulate others

- Acquire multiple use areas only

D. Rely on existing levels of acquisition and current forms of regulation

7.3 Incorporate Design Standards Into Decisions

A. Adopt mandatory appearance and design criteria and standards for use in all decisions influencing siting and development in the Long Island Sound region regardless of scale or scope of project.

- Federal permit review procedures
- Federal and state EIS review procedures
- Coastal Zone Management Act regulations
- Local land use controls, particularly shoreline zoning
- Local subdivision regulations

B. Adopt mandatory appearance and design criteria and standards for developments of regional impact only:

- State review over large developments (as in Florida and Vermont)
- Bistate review over facilities with bistate impact

C. Adopt additional advisory criteria only, for all areas of concern

D. Rely on existing standards and procedures

7.4 Protect Appearance of Historic Townscapes

A. Fund new programs for regulation of entire "scenic townscapes" through new legislation

B. Expand scope of existing historic preservation legislation to include sites not necessarily "historic" in nature but with architectural or cultural value

C. Rely on existing legislation and mechanisms for protection

7.5 Improve Appearance of Mediocre Townscapes

A. Acquire and redevelop deteriorated urban areas and unattractive fringe areas

B. Adopt new zoning and subdivision controls to improve design of new developments

- PUD and cluster zoning

- Mandatory dedication of open space within subdivisions and large scale development

- Density transfer

- Architectural controls including setback and height controls related to topography in shoreline areas

C. Fund new programs for rehabilitation by owners

D. Combined acquisition and regulation

E. Rely on existing levels of action

7.6 Remove, Ameliorate and Prevent Eyesores

A. Rely mainly on acquisition and redevelopment of major eyesore areas

B. Rely mainly on codes and regulations to compel owners to rehabilitate eyesores

- Nonconforming use provisions of zoning ordinances (for low value uses)

- Building and health codes

- Architectural controls

C. Combined acquisition and regulation

D. Encourage owners to rehabilitate eyesores

- Loans and grants

- Technical assistance

E. Rely on existing tools

7.7 Enhance Appearance of Large-Scale Facilities

A. Rely mainly on mandatory design standards in:

- Siting legislation

- Land-use regulations

- Subdivision controls

B. Rely mainly on advisory design standards, and encourage voluntary action, through:

- Loans and grants

- Technical assistance

- Density bonus provisions

C. Rely on existing tools

7.8 Enhance Harbors and Harborside Areas Through General Improvements and Clearance of Derelicts and Debris

A. Rely mainly on acquisition and redevelopment for harborside improvement

B. Rely mainly on regulatory controls to improve harborside aesthetics

- Aesthetic and environmental carrying capacity guidelines

- Recreational boating activity zoning to regulate water surface usage

- Shoreline zoning to regulate types and appearance of uses on shore

- Increased surveillance over jettisoning of waste and debris; enforcement of EPA and state pumpout requirements

- Regulations governing and zoning of moorings and anchorages

- Regulations over location and size of marinas to ease congestion

C. Combine acquisition and regulation

D. Rely on existing levels of action

7.9 Protect Viewpoints and Adjacent Areas

A. Accelerate acquisition of lands and easements to protect all high priority viewpoints

- Acquire viewpoints and manage as public areas at state or local level

- Acquire scenic easements

B. Use regulations to protect scenic views:

- Controls over location and appearance of utility lines and rights of way

- Height controls in zoning ordinances to prevent construction which will obstruct views

- Institution of permit procedures for development in the path of views

C. Combine acquisition and regulation

D. Rely on existing levels of action

7.10 Improve Public Access to Shore and Viewpoints

A. Rely mainly on acquisition of lands and easements to provide access to shore and viewpoints

B. Secure access across private lands through regulation

- Institutions - as condition of tax exempt status

- Utilize utility siting legislation

- Permits for development in coastal zone

C. Combine acquisition and regulation to create a continuous greenspace system along shore

D. Rely on existing acquisition and regulatory actions

7.11 Upgrade Quality of "Captive Views"

A. Acquire large reaches of lands or scenic easements in corridors of shore approach roads, highways, and railroads and hold for the public or lease back subject to conditions

B. Rely on regulation of types and appearances of land use in highway corridors

- Enforce architectural controls for highway commercial development and development adjacent to railroad corridors

- Restrict commercial zoning districts along local roads

- Control transmission line appearance and location

- Extend advertising controls in highway corridors

- Use nonconforming use provisions to eliminate unsightly signs and low value land uses

C. Combine acquisition and regulation

- Implement composite program on designated scenic highways

D. Rely on existing tools

7.12 Increase Public Awareness of Region's Scenic Resources:

A. Fund intensive-coverage media programs and informational literature

B. Develop public hearings, regional tour guides and educational programs in local schools and cultural institutions

C. Combine intensive programs and public discussion and education over the long-term

D. No new public action

8.0 EVALUATION OF ALTERNATIVE MEASURES

In Appendix C, the alternative actions developed for each policy objective were evaluated in terms of 54 environmental, economic and social criteria. These criteria were developed to reflect guidance contained in the Principals and Standards of the United States Water Resources Council, environmental impact statements and other sources. Each of the 48 alternative actions is evaluated in terms of each of the 54 criteria. Notes explain the basis for evaluation, and describe terms and changes made to reflect shoreline appearance and design considerations.

The following limitation must be considered in applying the 54 standards to shoreline appearance and design alternatives. Alternative measures developed to achieve shoreline appearance and design goals are not easily evaluated in quantitative terms. Many of the measures involve policy decisions and regulatory techniques; none involve specific development projects. Thus, the Water Resources Council format contained here is of limited usefulness as an evaluation tool. While the environmental and social criteria can easily be used to assess the long term effects of policy and regulatory

alternatives, the detailed economic criteria are applicable to such measures in relative terms only.

In this section, the basic premises underlying the evaluation process are described. The evaluation matrix is included in the Appendix; summary ratings of alternatives are included in Table 4.

8.1 Major Environmental Considerations

Since one of the major shoreline appearance and design goals is preservation and enhancement of the appearance of natural landscape patterns, most of the alternatives are evaluated positively in terms of environmental criteria. The highest evaluations are given to those measures which call for actual acquisition of scenic areas. Regulatory measures are also rated positively. Reliance on existing tools is given either an 0 (minimal impact) rating or a negative rating, since the continuance of present development patterns and site planning and design control would eventually contribute to reduced environmental quality.

8.2 Major Economic Considerations

As stated above, the alternative measures are not easily evaluated in economic terms. However, the following general points can be made:

- Measures taken to preserve scenic lands and exert control over site planning and design generally counteract market trends.

- Costs are incurred by owners who are compelled to meet design standards, by those whose property is reduced in value by regulation, and by public agencies who acquire lands. The greatest costs arise from mandatory standards (private costs) and outright acquisition (public costs).

- Preservation and restoration of visual quality and cultural sites is like most things in life - if we want it, we have to pay for it. The only choice, if it is decided that enhanced visual quality and cultural site preservation is desirable, is - who pays for it. If public acquisition of fee title or easements is decided upon, every tax payer pays in terms of tax moneys expended for acquisition. If preservation and enhancement is sought through development controls, owners of the property controlled pay indirectly through reduced value, or reduced appreciation in value, of their property.

- Although benefits of improved aesthetics are generally non-quantifiable, preservation of scenic lands yields benefits in terms of preserved wildlife and increased recreational opportunities.

TABLE 4

SUMMARY EVALUATION OF ALTERNATIVE MEASURES

	Environmental quality (EQ)	National Economic Efficiency (NEE) and Regional Development (RD)	Social Well-being (SW)
PRESERVE SCENIC NATURAL LANDSCAPE PATTERNS			
Outright acquisition and purchase of development rights	good	good	good
Land use regulations with design controls	good	fair	fair
Combine regulation and acquisition	good	good	good
Rely on existing levels of acquisition and regulation	poor	fair	poor
CONSERVE FIVE CORRIDOR AREAS			
Acquisition of title and development rights in corridor areas	good	good	good
Use land-use and design controls	good	fair	good
Combine accelerated acquisition and more stringent regulation	good	good	good
Rely on existing acquisition and regulatory actions	poor	fair	poor

INCORPORATE DESIGN STANDARDS INTO PROJECT DECISIONS			
Adopt mandatory appearance and design criteria and standards for all projects regardless of scale and scope	good	good	good
Adopt mandatory appearance and design criteria and standards for developments of regional impact only	good	fair	good
Adopt advisory criteria only	fair	fair	fair
Rely on existing standards and procedures	fair	fair	fair
PROTECT APPEARANCE OF HISTORIC TOWNSCAPES			
Fund new programs for scenic townscape protection	good	good	good
Expand scope of existing historic preservation legislation to include sites of architectural or cultural value	good	fair	good
Rely on existing legislation and mechanisms	fair	fair	fair
IMPROVE APPEARANCE OF MEDIOCRE TOWNSCAPES			
Acquire and redevelop deteriorated urban areas and fringe areas	good	good	good
Adopt new zoning and subdivision controls	good	fair	good
Fund new programs for rehabilitation by owners	good	fair	fair

Combine acquisition and regulation	good	good	good
Rely on existing levels of action	fair	poor	fair
REMOVE, AMELIORATE, AND PREVENT EYESORES			
Acquire and redevelop major eyesore areas	good	fair	good
Compel owners to rehabilitate by use of codes and regulations	good	fair	good
Combine acquisition and regulations	good	fair	good
Encourage owners to rehabilitate	fair	fair	good
Rely on existing tools	poor	poor	poor
ENHANCE APPEARANCE OF LARGE SCALE FACILITIES			
Enforce mandatory design standards in controls	fair	fair	fair
Rely on advisory standards and voluntary action	fair	fair	good
Rely on existing tools	poor	poor	poor
ENHANCE HARBORS AND HARBORSIDES			
Acquire and redevelop harborside areas	good	good	good
Use regulations to improve harborside aesthetics	good	good	good

Combine acquisition and regulation	good	good	good
Rely on existing levels of action	poor	poor	poor

PROTECT VIEWPOINTS AND ADJACENT AREAS			
Accelerate acquisition of lands and easements	good	fair	good
Use regulations to protect scenic views	fair	fair	fair
Combine acquisition and regulation	good	fair	good
Rely on existing levels of action	fair	fair	fair

IMPROVE PUBLIC ACCESS TO SHORE AND VIEWPOINTS			
Acquire lands and easements to provide access to shore and viewpoints	good	fair	good
Secure access across private lands through regulation	fair	fair	good
Combine acquisition and regulation to create green-space system	good	good	good
Rely on existing tools	fair	fair	fair

UPGRADE QUALITY OF "CAPTIVE VIEWS"			
Acquire lands and easements in highway and railroad corridors	good	good	good
Regulate types and appearances of land use in highway corridors	fair	good	good

Combine acquisition and regulation	good	good	good
Rely on existing tools	fair	fair	fair
INCREASE PUBLIC AWARENESS OF REGION'S SCENIC RESOURCES			
Fund intensive-coverage media programs and informational literature	fair	fair	good
Develop public hearings, regional tour guides and educational programs in local schools and cultural institutions	fair	fair	good
Combine intensive programs and public discussion and education over the long term	fair	fair	good
No new public action	fair	fair	fair

The resulting concentration of population and economic activity yields long-term benefits in terms of reduced costs of municipal services, energy conservation and reduced travel costs. The preservation of the aesthetic character of the region will also yield long-term benefits in terms of increased tourism and recreational activity, which might be lost if the area were allowed to develop without controls.

Thus, the idea that preservation of natural lands, restrictions on land-use development and design controls are on the whole detrimental to economic development can be dispelled. While short-term costs are incurred by investors, the resulting aesthetic benefits aid the economy in the long-term, much in the same way as benefits from sound land-use controls.

8.3 Major Consideration of Social Well-Being

The social criteria to which the alternatives respond most strongly are those which deal with the quality of life and educational, cultural and recreational opportunities. In terms of meeting objectives of the other work groups, the shoreline appearance and design alternatives correspond most closely with land-use, water quality, recreation and fish and wildlife objectives. In general those measures calling for outright acquisition and the most stringent regulation were given the highest ratings. Alternatives which called for new forms of land-use control, for state involvement in local land-use decisions and for mandatory design controls, were given negative ratings in terms of judicial involvement, ease of administering and ease of passing laws due to anticipated political difficulties in instituting such controls, but were assigned positive summary ratings because of the mid-term and long-term advantages to both the public and private sector that can be expected to result from such measures. Measures dealing with acquisition of land and easements and advisory standards were given more positive ratings since the institutional structure for their implementation already exists.

8.4 Measures to Preserve Scenic Natural Landscape Patterns

The major alternatives for preserving natural scenic areas emphasize acquisition, regulation and a combined program. The most positive benefits are gained from outright acquisition; in this case the preservation of scenic lands is assured and they can be used by the public. This method of preservation is also the most costly, although easements can be purchased for less than full market value. Regulation of land use can take place at the state, county, or local level of government. Assumption of new state functions in this area would insure that areas of regional concern would insure that areas of regional concern would be protected; local zoning efforts would be more haphazard in their effects. In the case of regulation, costs are usually borne by the landowner, whose property is reduced in value, unless compensation is paid by the government.

Both the regulatory and acquisition alternatives, as well as the combined alternative, rate high in terms of environmental and social criteria.

The question of timing is critical. Scenic areas, once developed, are much more difficult, if not impossible, to reclaim. The combined approach allows for immediate actions to save endangered areas, as well as long-term regulation and protection efforts.

8.5 Measures to Conserve Five Corridor Areas

While the alternatives for conservation of the five high quality scenic corridors are the same as those for preserving scenic areas in general, their application in this case is different. Since the basic aim in conserving these areas is preserving the existing balance of open and developed lands, outright acquisition of all open lands within the corridors is not desirable. On the other hand, one can expect a greater emphasis on acquisition in these areas then elsewhere due to their unique scenic and environmental nature.

All alternatives were rated positively in terms of environmental and social criteria. Since actions in these areas will affect smaller areas of land than actions in the region as a whole, some ratings were lower than ratings for alternatives under Objective 1.

8.6 Measures to Incorporate Design Standards Into Project Decisions

The alternatives to meet this objective range from mandatory standards to advisory standards and guidelines. The strongest action would be to adopt mandatory design standards in all decisions. Or, a system could be developed for use of standards in land use decisions with regional impact, (i.e., proposed development for parcels over a certain acreage limit). Both of these alternative measures might create legal problems and would be difficult to institute and administer. The alternative of advisory standards only would be easiest to pass and administer, yet its beneficial impacts would be greatly reduced.

In all of these cases, costs of complying with the design standards would be borne by the developers and property owners, rather than the government.

8.7 Measures to Protect the Appearance of Historic and Architecturally Vital Townscapes

Alternatives for protection of historic townscapes include passage of new legislation to protect entire "scenic townscapes", expansion of existing historic district legislation to include a wider range of sites, and reliance on existing levels of action. New legislation to protect entire scenic townscapes would have the effect of extending historic district controls

to larger areas, including fringes of districts. This program would provide for state or regional review over land-use decisions affecting designated areas. This alternative was given high environmental and social ratings; costs would be borne by private owners in the districts, although some costs would be possibly recovered through increased re-sale value for the same use. Ease of passage and administration of the law were given lower ratings.

Expansion of scope of current historic district legislation would be easier to pass and implement. In this case, assistance for preservation and restoration would be extended to cover a broader range of sites, including areas not necessarily "historic" in nature, but with architectural or cultural significance. Costs here would be distributed among the government, historical societies and private owners. This alternative was given high environmental and social ratings.

8.8 Measures to Improve the Appearance of Mediocre Townscapes

The alternatives here include measures both to improve the design of new development and to rehabilitate existing city and town areas which are aesthetically poor, deteriorating, or dilapidated. New types of zoning and subdivision controls could be instituted within the framework of current enabling legislation. Such new tools were given high environmental and social ratings for the aesthetic improvements which they would bring about. However, ease of passing these laws at the local level was rated negatively.

Public action to acquire and redevelop aesthetically poor, deteriorated, or dilapidated areas was also rated high on environmental and social criteria. Costs in this area would be largely borne by the public sector through funding new programs aimed at renewal and rehabilitation. Immediate action is unlikely due to the shortage of federal urban renewal funding. Aid to owners for private rehabilitation efforts would involve a lower level of public costs; environmental and social benefits are positive but to a lesser degree than large scale redevelopment.

8.9 Remove, Ameliorate and Prevent Eyesores

In this case, the alternatives again range from maximum emphasis on acquisition and redevelopment to reliance on public regulation. In the cases of acquisition and provision of incentives to owners for rehabilitation, costs would be borne by the government; in the case of regulation and code enforcement, the major costs would be borne by property owners forced to relocate or rehabilitate properties. Removal of eyesores would have indirect beneficial environmental effects beyond aesthetic improvement, in that sources of pollution would be removed. Social benefits in terms of increased aesthetic enjoyment are high in all cases.

8.10 Enhance Appearance of Large Scale Facilities

The range of alternatives here is from mandatory guidelines and standards for large facilities to advice and help from the government, motivating voluntary actions by owners and developers. In either case, major costs would be borne by owners or passed along to consumers.

In general, the environmental and social impacts of the above measures were judged to be positive, but to a minor degree.

8.11 Enhance Harbors and Harborsides

Redevelopment of harbors and harborside areas, while requiring costly public acquisition, rates high in terms of environmental and social criteria. Regulation also is rated high, since establishment of carrying capacities and segregation of different boating types on the water eliminates pollution and restores water quality. Ease of establishing these types of regulations was rated negatively.

8.12 Protect Viewpoints and Adjacent Areas

The most permanent protection of views and viewpoint areas is through acquisition of lands and easements, although regulatory controls over such features as overhead utility lines and zoning changes to incorporate height restrictions on construction in the viewer's line of vision can also afford protection at lower cost. Acquisition of full title to viewpoint areas was rated high in terms of social and environmental criteria, and is preferable to easement acquisition alone in that the viewpoint can be managed as a public area; acquisition of easements is preferable in terms of protecting views themselves, where actual public access to the land is not important.

Regulatory controls were also rated high socially and environmentally; in many cases (especially in such areas as transmission line appearance) they could be easily instituted. The combined program of acquisition and regulation ensures the widest range of protection.

8.13 Provide Public Access to Shore and Viewpoints

The most effective way of providing access to the shore is through public acquisition of fee simple and/or easements by regulatory action. This type of action, consistent with the idea that shoreline lands are in the public trust, would have the highest environmental and social benefits, as well as the highest costs. Acquisition can also be used to provide access to selected shore areas and viewpoints; easements can be acquired to provide for rights-of-way through private lands. Here the public costs and environmental and social benefits are lessened. Provision of access can also be required through regulation; in this case, costs are transferred to the property owners. The

recreation and open space value of individual access points can also be maximized if they are linked by public shorelines and beaches and by a continuous open space system.

8.14 Upgrade the Quality of "Captive Views"

The purpose of this objective is to improve the visual quality both of highway and railroad corridors themselves, and of long distance views seen from the road and the railroad. Again, acquisition, by excess condemnation along the highway, or acquisition of scenic easements, can be used to improve these views with high environmental and social ratings and high public costs. Leaseback agreements, however, can lessen these costs while providing the same benefits. Architectural controls in zoning ordinances and advertising controls can also be used in corridor areas. These actions also have high environmental and social benefits; costs are transferred to the private sector.

8.15 Increase Awareness of the Region's Scenic Resources

The alternatives in this case all involve publicly supported education or information programs. Social benefits are high, environmental benefits are indirect and long-term in nature. Such programs are easily instituted and administered; their adoption is an immediate priority. The sooner the public can be educated on the needs for scenic and natural protection and preservation, the sooner all the other more direct programs can be implemented with public support. Media programs and public meetings are most important for raising awareness in the short-term; development of school programs is a more long-range program. The two can be effectively combined to keep the public aware of protection issues far into the future.

9.0 MAJOR CONSIDERATIONS: ENVIRONMENTAL QUALITY, NATIONAL ECONOMIC EFFICIENCY

Inherently, all of the stated shoreline appearance and design objectives are oriented to the goal of improved environmental quality. None are specifically oriented toward increased outputs of goods or services within the region. However, in the long-term, many of the protection and land-use control measures recommended for achieving shoreline appearance and design objectives will bring about beneficial economic effects in terms of increased concentration of population and industrial development, leading to reduced costs of municipal services and infrastructure/transportation requirements. Many of the measures may also attract additional tourists, industries, and residents to the region, benefiting local and regional economies. The location of new development in suitable growth areas, rather than in dispersed patterns throughout the region, will have the further effect of increasing economic efficiency in the long-term through the encouragement of land-use stability and the discouragement of speculative and marginal alnd-use disposition.

Due to the unique environmental bias of the shoreline appearance and design study element, therefore, the formulation of distinct environmental and economic plans for the purposes of benefit/cost comparison was considered infeasible. Instead, a comparison of three levels of intensity of public management was made, and the environmental and economic effects of each were evaluated. These three levels can be identified as: 1) maximum reliance on public acquisition, 2) maximum reliance on regulatory controls, and 3) composite plan.

9.1 Plan for Maximum Reliance on Public Acquisition

This plan represents an approach which would rely mainly on public acquisition to carry our shoreline appearance and design objectives. Measures included in this plan are included in Table 5, with summary environmental, economic, and social ratings. Summarized, these measures would involve acquisition of all critical natural and scenic areas, viewpoint areas, lands adjacent to highway corridors, eyesore areas, and deteriorated urban areas and fringe areas (either for permanent public management or leaseback or resale alternatives).

This plan is based on the assumption that the only truly certain way to protect important scenic resources is through direct public ownership, and subsequent management or redisposition. Further, it assumes that effective regulations governing appearance and design will not be enacted with requisite speed, and that present levels of regulation will remain constant. Under this plan, public ownership (temporary or permanent) would consititute the principal means for securing public access and restoring eyesore and low visual quality areas. The advantages of this plan are that;

- public ownership ensures that desired action (conservation or redevelopment) will be taken
- no new significant legislation is necessary; acquisition can be carried out under existing governmental authority
- action can be taken immediately to protect threatened areas
- acquisition may be the only effective means to bring about the visual improvement of many eyesores

The major disadvantage of this plan is its exceedingly high cost. Land values along the shoreline, in particular, and in the Long Island Sound region as a whole, are so high that acquisition on such a massive scale becomes virtually impossible.

9.2 Plan for Maximum Reliance on Regulatory Controls

This plan represents an approach which would rely mainly on state,

county, and local regulatory action to carry out shoreline appearance and design objectives. Measures included in this plan are included in Table 6, with summary environmental, economic and social ratings. Summarized, these measures include mandatory design standards for all development projects and major facilities within the regional viewshed, new forms of land-use controls at the local, state, and county level, new types of historic district and townscape regulations, shoreline and water surface zoning, advertising and architectural controls in highway corridors, requirements for public access, and enforcement of building and health codes.

This plan is based on the assumption that the public sector will not agree to bear costs of acquisition for scenically important areas significantly above present levels, and that continuing programs of stringent regulation are necessary to ensure that new development is located and designed to maximize aesthetic objectives. The advantages of this plan are that:

- enforcement of regulations containing design standards can control the appearance of private development without direct government purchase or expense

- regulations have in the past proven to be effective in governing aesthetic quality in urban areas, when vigorously enforced. Better regulations and better enforcement could achieve much more.

- regulations can be used to protect ecologically sensitive areas at no cost to the government

- regulation, especially at the state level, is comprehensive in its coverage; it affects all areas and projects within the level of jurisdiction at which it is administered

Disadvantages of a plan relying principally on regulation are that:

- regulations do not ensure permanent protection of sensitive areas; they can be appealed or changed

- stringent new land-use and design controls, especially those involving state override powers over local authority, will be likely to encounter severe opposition in the legislatures of both states

9.3 Composite Plan

The composite plan combines the two approaches of acquisition and regulation and adds the alternatives of public education programs. In this plan, priorities would be set for acquisition to protect scenic areas and to redevelop blighted or fringe areas, and regulation would be strengthened over

time to produce widespread protection and aesthetic improvements. The major advantage of the Composite Plan is that it adjusts public and private costs in achieving the objectives. Measures included in the Composite Plan, with summary environmental, economic, and social ratings, are included in Table 7.

9.4 Comparison of the Three Plans

Figures 1-6 illustrate, in a schematic way, the relationships among the three plans in terms of national economic efficiency, environmental quality, per capita cost of municipal services, economic development (private sector), owner investments for improvements, and public expenditures.

9.5 Analysis of the Composite Plan

As shown in these generalized graphs, the composite plan:

- approximates the national trend with respect to national economic efficiency, with fewer initial costs than are incurred under the maximum acquisition plan

- counteracts the national trend with respect to environmental quality, achieving more environmental benefits than the maximum regulation plan and achieving almost as high a level of environmental benefits as the maximum acquisition plan, but distributed over a longer period of time

- reduces the costs of municipal services over the long-term, counteracting the national trend

- reduces private sector economic development in the short-term (1-2 years), surpasses the national trend in the medium-term, as investors readjust to new land-use patterns, and returns to the national trend thereafter

- adds a minor cost burden to property owners for aesthetic improvements

- increases public expenditures for acquisition, but to a lesser extent than the maximum acquisition plan

9.6 Priorities

The most important decision to be made in implementing the composite plan is the establishment of priorities for lands to be acquired. The following criteria should be considered:

+ Landscape value and ecological sensitivity

  - value of the resource to the general public
  - desirability of restricting development or modification of the resource
  - relationships, including proximity of the resource to other protected areas
  - location within the five Long Island Sound shoreline quality corridors identified as deserving special consideration for protection or within the regional shoreland viewshed as a whole

+ Potential for public use

  - possible recreational value
  - desirability of public access and use of area (particularly viewpoints and shoreline)
  - relationship to open space/recreation plan

+ Timing

  - severity of development pressure on area
  - inadequacy of zoning and other controls in the face of possible undesirable development

Once such priorities are established, a rational acquisition program can be initiated, and supplemented by new regulatory schemes as they are passed in the state legislatures and at the county and local levels.

The tentative recommendations have thus been derived following consideration of these criteria as applied to the Long Island Sound region.

TABLE 5

SUMMARY RATINGS:

MAXIMUM ACQUISITION PLAN

	Environmental quality (EQ)	National Economic Efficiency (NEE) and Regional Development (RD)	Social Well-being (SW)
Outright acquisition and purchase of development rights to preserve scenic landscape patterns	good	good	good
Acquisition of title and development rights in scenic corridor areas	good	good	good
Acquire and redevelop deteriorated urban areas and fringe areas	good	good	good
Acquire and redevelop eyesore areas	good	fair	good
Acquire and redevelop harborside areas	good	good	good
Acquire lands and easements to protect viewpoints	good	fair	good
Acquire lands and easements to provide access to shore	good	fair	good
Acquire lands and easements in highway corridors	good	good	good

TABLE 6

SUMMARY RATINGS:

MAXIMUM REGULATION PLAN

	Environmental quality (EQ)	National Economic Efficiency (NEE) and Regional Development (RD)	Social Well-being (SW)
Employ land-use regulations with design controls to preserve scenic natural landscape patterns	good	fair	fair
Use of land-use and design controls in corridor areas	good	fair	good
Adopt mandatory appearance and design criteria and standards for all projects	good	good	good
Fund new programs for scenic townscape protection	good	good	good
Adopt new zoning and subdivision controls to improve appearance of new development	good	fair	good
Use codes and regulations to compel owners to rehabilitate eyesores	good	fair	good
Enforce mandatory design standards in legislation governing major facilities	fair	fair	fair
Use new forms of regulation in harborside areas	good	good	good
Use regulations to protect scenic views	fair	fair	fair
Require access to shore through regulation	fair	fair	good
Regulate types and appearance of development in highway corridors	fair	good	good

TABLE 7

SUMMARY RATINGS:

COMPOSITE PLAN

	Environmental quality (EQ)	National Economic Efficiency (NEE) and Regional Development (RD)	Social Well-being (SW)
Combined acquisition and regulation to preserve scenic natural landscape patterns	good	good	good
Combined acquisition and regulation in scenic corridor areas	good	good	good
Combined acquisition and regulation to protect viewpoints and adjacent areas	good	fair	good
Combined acquisition and regulation to form greenspace system along shore	good	good	good
Combined acquisition and legislation in highway corridors	good	good	good
Combine intensive media programs and public discussion and education over long term	fair	fair	good
Adopt mandatory appearance and design criteria and standards for all projects	good	good	good
Fund new programs for scenic townscape protection	good	good	good
Combine acquisition and regulation to improve appearance of mediocre townscapes	good	good	good
Combine acquisition and regulation to remove eyesores	good	fair	good
Combine acquisition and regulation in harbors and harborsides	good	good	good

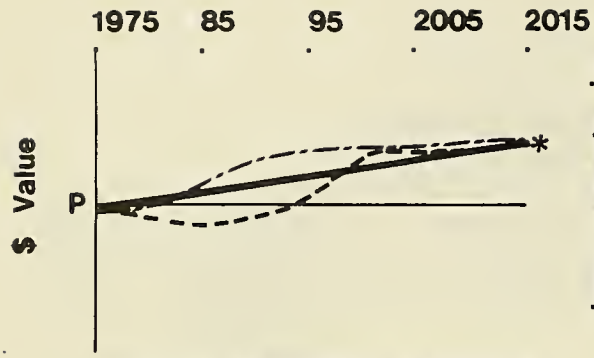
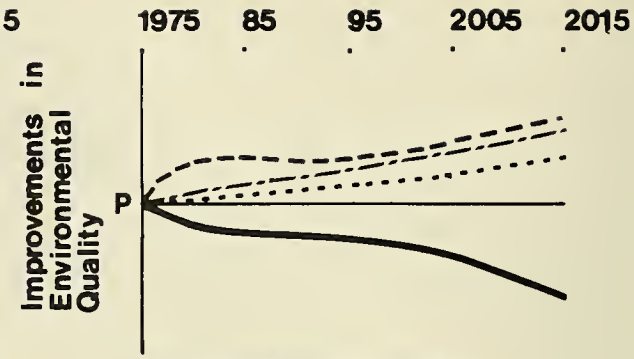


Fig. 1. National Economic Efficiency (benefit)



2. Environmental Quality (benefit)

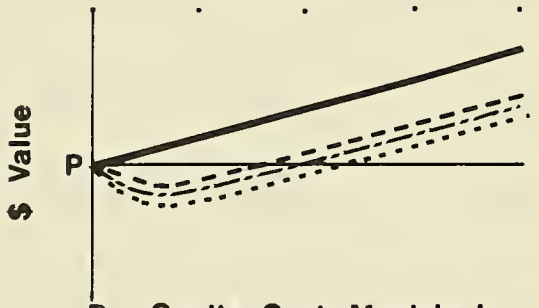
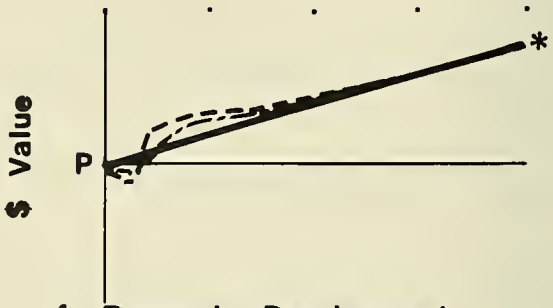


Fig 3. Per Capita Cost–Municipal Services (cost)



4. Economic Development (Private Sector) (cost)

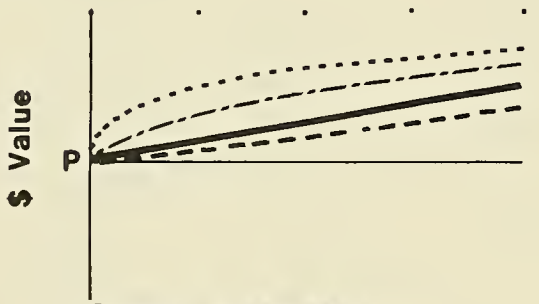
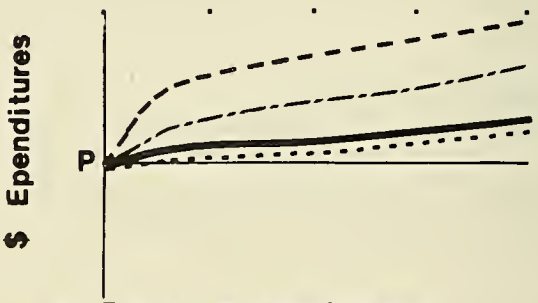


Fig. 5. Owner Investments – Improvements (cost)



6. Public Expenditures – Aquisition (cost)

Legend:

P Present level

——— Trend

– – – – Plan one

. . . . . Plan two

—·—·— Plan three

——— * Trend and Plan two

10.0 TENTATIVE RECOMMENDATIONS

Implement the Composite Plan as detailed earlier in Table 7, and described in Sections 9.4 and 9.5, and highlighted as follows:

- Develop, at the state level, high-priority immediate-term programs for scenic preservation and conservation of areas of special scenic concern in five quality corridors: 1) Connecticut shore and upper shorelands east of New London to the Rhode Island border, 2) the "Green Triangle" between Branford and Saybrook, 3) portions of the Lloyd's Neck-Eatons Neck area, 4) the Nissequogue-Crane Neck area, and 5) the Long Island North Fork east of Wading River. SHORT TERM

- Adopt mandatory site selection, site planning and design criteria at the state level for all major facilities proposed for locations within the regional viewshed of Long Island Sound. SHORT TERM

- Adopt, at the substate regional, county, and local levels, mandatory and advisory site selection, site planning and design criteria for projects of moderate and small scale proposed for locations within the regional viewshed. SHORT TERM

- Establish a fund for preservation grant assistance for the acquisition of fee title and rights in all shoreline and upper shoreland areas of special scenic concern. This fund should receive a minimum of $50 million from federal and state sources and should be applied to 20,000 or more acres within a five year period. SHORT-MEDIUM TERM

- Establish on the state level a register of critical natural, scenic, historic and townscape areas within the Long Island Sound region, and a priority system to guide all decisions regarding protection and acquisition. SHORT TERM

- Broaden protection of scenic urban and town areas by legislating, on the state level, a scenic townscape act to identify and protect settled areas of high scenic and cultural importance. SHORT TERM

- Adopt, on the state level, improved criteria and measures for aesthetic and environmental carrying capacities for boating in the region's recreational and commercial harbors. SHORT TERM

- Adopt or amend harborside improvement programs on the state level that will achieve aesthetic amelioration of commercial

and recreational harbors and harborside areas. SHORT TERM

- Acquire title and easements on the state, county and local levels, to protect and provide public access to important scenic viewpoints and adjacent areas not adequately protected through zoning or other means. SHORT TERM

- Enact state legislation which will require removal or enhancement by public and private entities of eyesores, as defined by the appearance and design criteria to be adopted at the substate regional and local levels. SHORT-MEDIUM TERM

- Fund educational programs and develop regional historic and scenic tour guides to increase public awareness of the region's scenic and cultural resources, combined with intensive media campaigns to be initiated immediately. SHORT-MEDIUM TERM

11.0 FINAL RECOMMENDATIONS

The preceeding recommendations have not necessarily been approved by the New England River Basins Commission. At the time of this report's publication, the draft main report of the Long Island Sound Regional Study is undergoing public review and comment for consideration in the final document. The FINAL RECOMMENDATIONS on Shoreline Appearance and Design are therefore to be found only in the final version of the Study's main report--to be published in the Spring of 1975.

APPENDIX A

COASTAL LANDSCAPE PATTERN METHODOLOGY

Since major determinants of visual quality are landform and development pattern, an analysis of these characteristics is the basis of the inventory method. The Scenic and Cultural Workgroup, working with the consultant, Natural and Historic Resource Associates, found in preliminary study and testing from a boat that the Long Island Sound coastline falls into 15 possible landscape coastal patterns, determined by the interplay of three types of landform (flatland, rise and bluff) and five development patterns (no development, scattered development, scattered development with industry, dense development and dense development with industry). Later experience showed that the pattern "bluff with dense development with industry" did not occur. In addition, it was found that landform was further complicated by the occurrence of one of more visual associations within a patterns such as sandy beach with scattered boulders and small areas of marsh, or steep, high bluff covered with shrubs and topped by a dense fringe of trees.

A Landscape Description Form on which to record visual data was prepared, and a field survey was conducted by boat during the period August 23 - September 8, 1972.

The field survey established that the Long Island Sound shoreline breaks down into 294 observable geographic units whose boundaries are determined by topographic features or development patterns. The survey also provided a mass of data recorded on the Landscape Description Forms and keyed to U.S. Geological Survey quadrangle sheets.

A Landscape Classification Inventory was developed to catalogue the complex landform and landcover characteristics of each of the 294 units. A Landscape Pattern Index was then prepared in the form of a horizontal graph depicting the 14 landscape coastal patterns. Schematic drawings illustrating each pattern were also prepared.

This methodology is a useful tool for gathering, cataloguing and analyzing large quantities of landscape data. The Landscape Description Form - with modification to select local landform, vegetation and structural characteristics - can be used to collect landscape data in other regions, and is applicable with slight or no modification to all estuarine areas of the United States. The Landscape Classification Inventory constitutes a standardized reference system which nevertheless is sufficiently dynamic to allow ready updating, thus reducing the cost of data collection. The Landscape Pattern Index affords a visual appreciation of a great range of information and the Landscape Patterns Inventory is a descriptive tool of considerable utility for further research, and for monitoring shoreline conditions. The findings of the scenic inventory involve an understanding of the prevalence of the 14 basic landscape patterns in the study area. Table 1 indicates the supply,

distribution, length, and frequency statistics of the Landscape Coastal Patterns between mainland (Connecticut, Westchester and Bronx) and Long Island's north shore.

SLOPE VARIES FROM 20% TO 100%

HEIGHT VARIES BETWEEN 15 FEET AND 75 FEET

AVERAGE HEIGHT IS APPROXIMATELY 50 FEET

DENSE FRINGE OF TREES ON TOP OF BLUFF

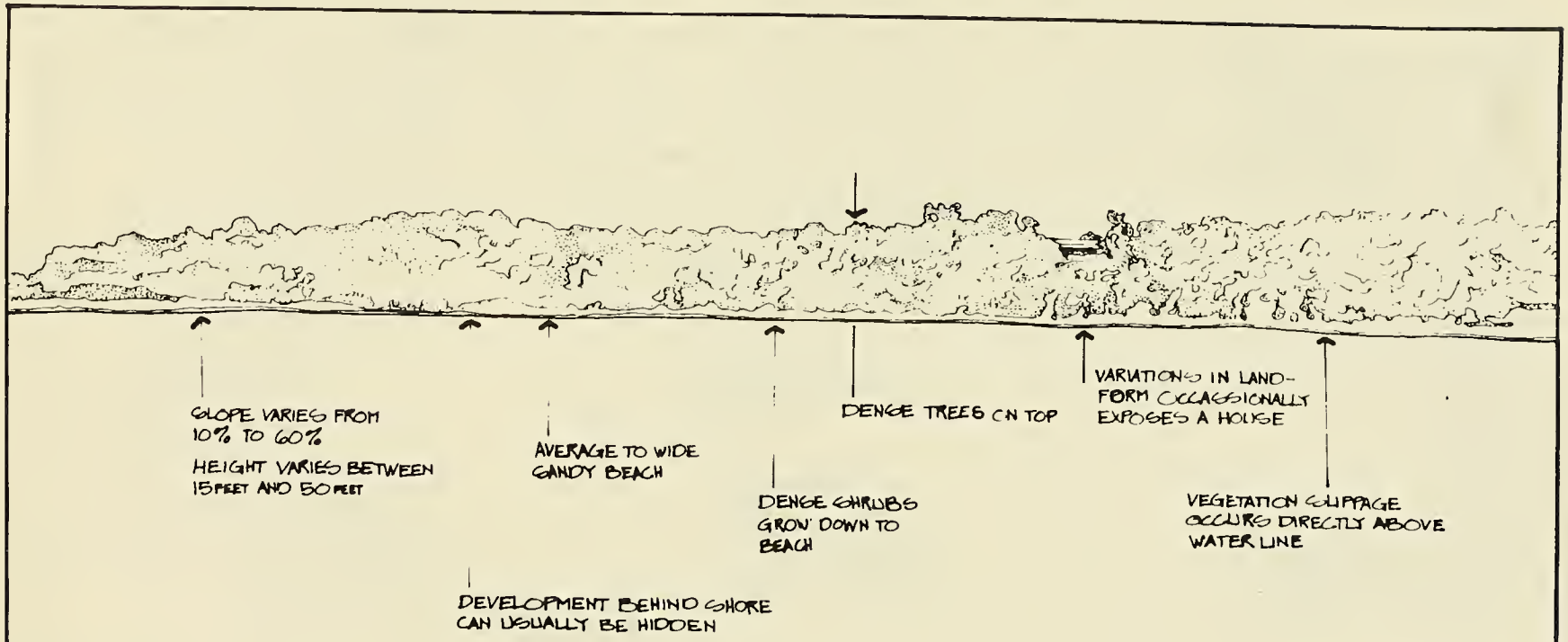
NARROW SANDY BEACH WITH SMALL TO MEDIUM SIZED SCATTERED BOULDERS THAT HAVE BEEN DISLOCATED FROM BLUFF

WIND EROSION STYRATIONS ON EXPOSED AREAS OF THE BLUFF

VEGETATION TENDS TO ERODE ON BLUFF EXPOSING BARE SAND AND CLAY

EXAMPLE FROM PORT JEFFERSON 3, PHOTO 4 - 34

New England River Basin Comm National Park Service Natural and Historic Resource Assc 313 S 16th st Philadelphia Pa	FREQUENCY 7 LENGTH 12 3 MILES	BLUFF WITH NO DEVELOPMENT	COASTAL LANDSCAPE PATTERN **1**


SLOPE VARIES FROM 10% TO 60%
HEIGHT VARIES BETWEEN 15 FEET AND 50 FEET
AVERAGE TO WIDE SANDY BEACH
DENSE TREES ON TOP
VARIATIONS IN LAND-FORM OCCASSIONALLY EXPOSES A HOUSE
DENSE SHRUBS GROW DOWN TO BEACH
VEGETATION SLIPPAGE OCCURS DIRECTLY ABOVE WATER LINE
DEVELOPMENT BEHIND SHORE CAN USUALLY BE HIDDEN

EXAMPLE FROM ST JAMES 5, PHOTO 5-15

prepared for
New England River Basin Comm.
under contract to
National Park Service
by
Natural and Historic Resource Assc.
313 S. 16th st., Philadelphia, Pa.

FREQUENCY 14
LENGTH 14.8 MILES

RISE WITH NO DEVELOPMENT

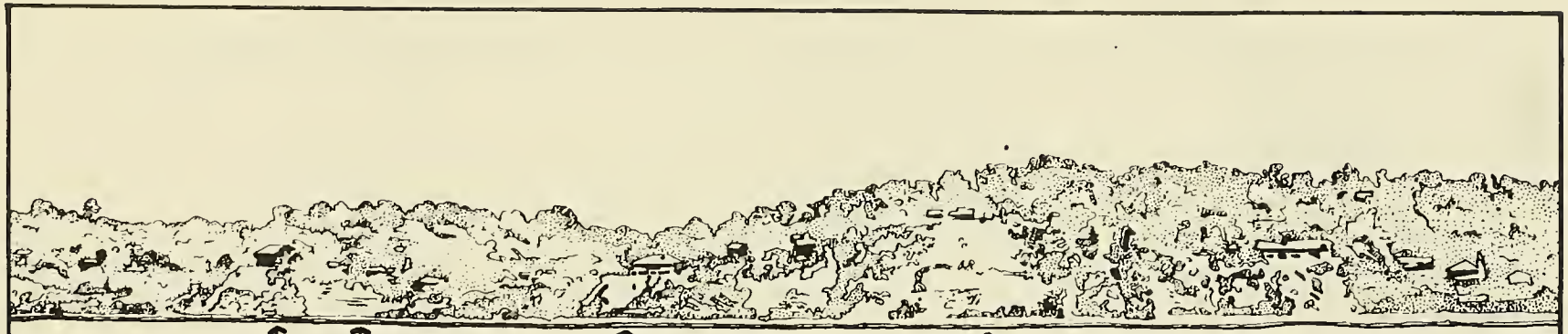
COASTAL LANDSCAPE PATTERN **2**

WIDE SANDY BEACH IS FOUND ALONG THE SHORE

STRUCTURES WITH LOW VISUAL (TELEPHONE POLES, ROADS) BECOME DOMINANT ELEMENTS

EXAMPLE FROM PORT JEFFERSON 7, PHOTO 5-7

New England River Basin Comm National Park Service Natural and Historic Resource Assc. 313 S 16th st., Philadelphia Pa	FREQUENCY 1 LENGTH .95 MILES	FLATLAND WITH NO DEVELOPMENT	COASTAL LANDSCAPE PATTERN **3**



BARE AREAS AND VEGETATION SLIPPAGE OCCURS BELOW HOUSES WHERE TREES ARE REMOVED

HOUSES WHERE TREES ON RIDGE ARE REMOVED ARE VISUALLY DOMINANT

DEVELOPMENT ALMOST ENTIRELY RESIDENTIAL

DEVELOPMENT OCCURS IN A LINE ON RIDGE

EFFORTS TO STABALIZE THE SOIL, PLANTING AND TERRACING

ZIG ZAG STAIR CASES

• DUMPING DEBRIS OVER THE EDGE IN AN EFFORT TO BUILD UP THE BLUFF CREATES EROSION BY DESTROYING FRAGILE VEGETATIVE COVER

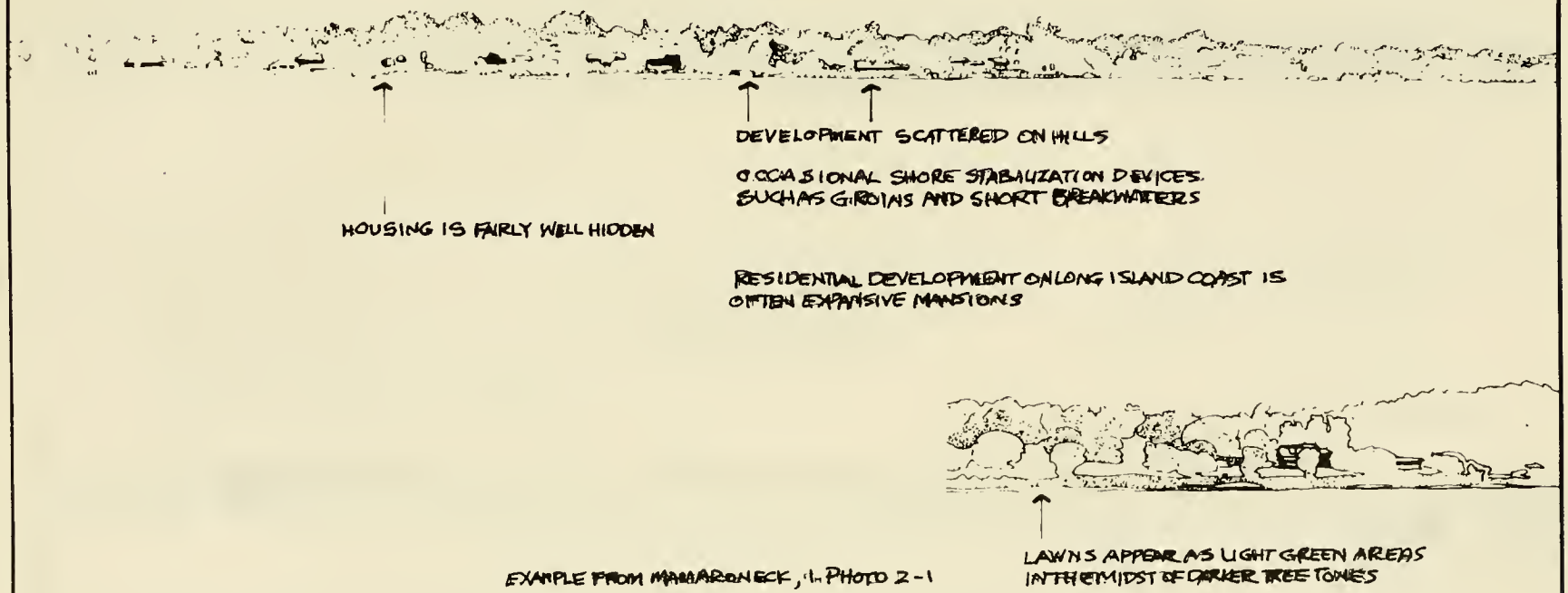
EXAMPLE FROM LLOYD HARBOR 2

prepared for
New England River Basin Comm.
under contract to
National Park Service
by,
Natural and Historic Resource Assc.
313 S. 16th st., Philadelphia, Pa.

FREQUENCY
30
LENGTH
37 1 MILES

BLUFF WITH SCATTERED DEVELOPMENT

COASTAL LANDSCAPE PATTERN **4**

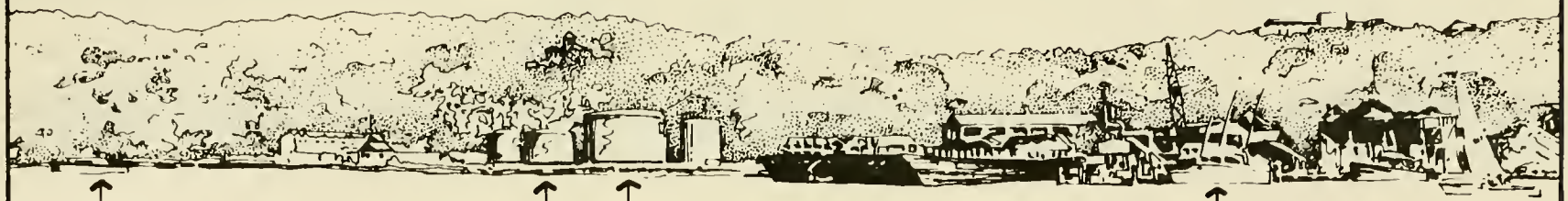

DEVELOPMENT SCATTERED ON HILLS
OCCASIONAL SHORE STABILIZATION DEVICES SUCH AS GROINS AND SHORT BREAKWATERS
HOUSING IS FAIRLY WELL HIDDEN
RESIDENTIAL DEVELOPMENT ON LONG ISLAND COAST IS OFTEN EXPANSIVE MANSIONS
LAWNS APPEAR AS LIGHT GREEN AREAS IN THE MIDST OF DARKER TREE TONES
EXAMPLE FROM MAMARONECK, N.Y. PHOTO 2-1

New England River Basin Comm National Park Service Natural and Historic Resource Assc 313 S 16th st Philadelphia Pa	FREQUENCY 69 LENGTH 97.1 MILES	RISE WITH SCATTERED DEVELOPMENT	COASTAL LANDSCAPE PATTERN **5**

DEVELOPMENT IS PRIMARILY INSTITUTIONAL AND RESIDENTIAL LOCATED NEAR WATERS EDGE
SEAWALLS AND DOCKS ARE COMMON
LARGE MARSHY AREAS ALONG CONNETICUTT SHORE
DOMINANT BACKGROUND FEATURES OCCUR OFTEN
OCCASSIONAL LARGE MANSION HAS HIGH VISUAL IMPACT

EXAMPLE FROM MYSTIC 9, PHOTO 11-25

New England River Basin Comm National Park Service Natural and Historic Resource Assc 313 S 16th st Philadelphia Pa	FREQUENCY 35 LENGTH 52.7 MILES	FLATLAND WITH SCATTERED DEVELOPMENT	COASTAL LANDSCAPE PATTERN **6**



DENSE TREES AND SHRUBS

HOUSING OCCURS ALONG RIDGE

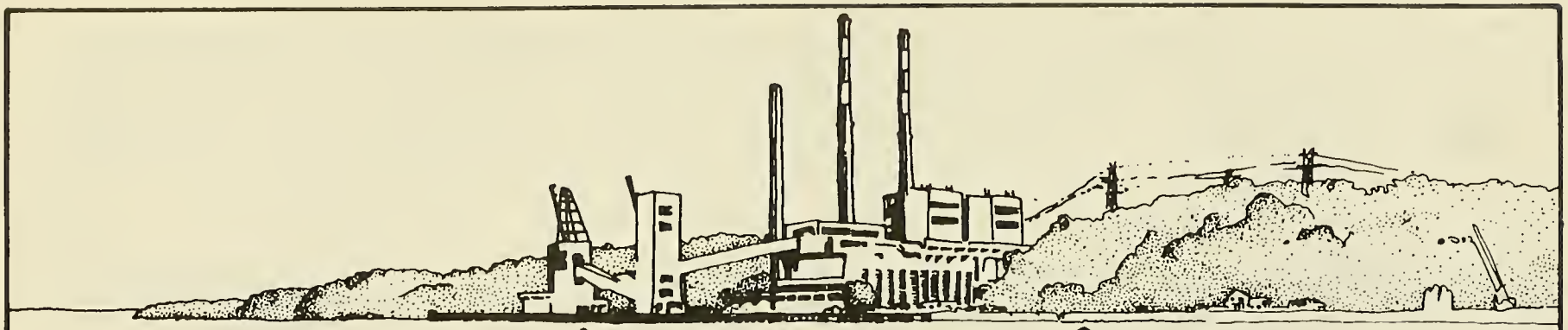
INDUSTRIAL DEVELOPMENT ON WATERS EDGE

INDUSTRIAL DEVELOPMENT TENDS TO VISUALLY DROWN OUT BOATS, DOCKS, AND MARINAS

COMMERCIAL AND RECREATIONAL DEVELOPMENT SUCH AS MARINAS AND DOCKS COMPETE WITH INDUSTRIAL USES

EXAMPLE PORT JEFFERSON 5, PHOTO 5-4

prepared for New England River Basin Comm under Contract National Park Service by Natural and Historic Resource Assc 313 S 16th st., Philadelphia, Pa	FREQUENCY 4 LENGTH 5.7 MILES	BLUFF WITH SCATTERED DEVELOPMENT / INDUSTRIAL	COASTAL LANDSCAPE PATTERN **7**



INDUSTRIAL DEVELOPMENT OCCURS ON THE OCCASSIONAL AREAS OF FLATLAND BETWEEN HILLS

POWER PLANTS COMMON

PUBLIC BEACHES IN THE VICINITY OF THE INDUSTRIAL DEVELOPMENT

HOUSING HIDDEN AND EXPOSED WITH PREDOMINANCE OF DENSE TREES

EXAMPLE FROM PORT JEFFERSON 5, PHOTO 5-6

prepared for New England River Basin Comm. under contract to National Park Service by Natural and Historic Resource Assc. 313 S. 16th st., Philadelphia, Pa.	FREQUENCY 13 LENGTH 22.3 MILES	RISE WITH SCATTERED DEVELOPMENT/ INDUSTRIAL	COASTAL LANDSCAPE PATTERN **8**

LONG VISTAS OCCUR

OLDER INSTITUTIONAL AND RESIDENTIAL DEVELOPMENT LOSING VISUAL DOMINANCE

SHORELINE IS PRIMARILY MARSH WITH SEAWALLS IN FRONT OF INDUSTRIAL DEVELOPMENT

INDUSTRIAL DEVELOPMENT NOT LIMITED BY LANDFORM TENDS TO SPREAD RATHER THAN CLUSTER

INDUSTRIAL DEVELOPMENT ON MAINLAND CONSISTS OF MANUFACTURING FACILITIES

SCATTERED VEGETATION

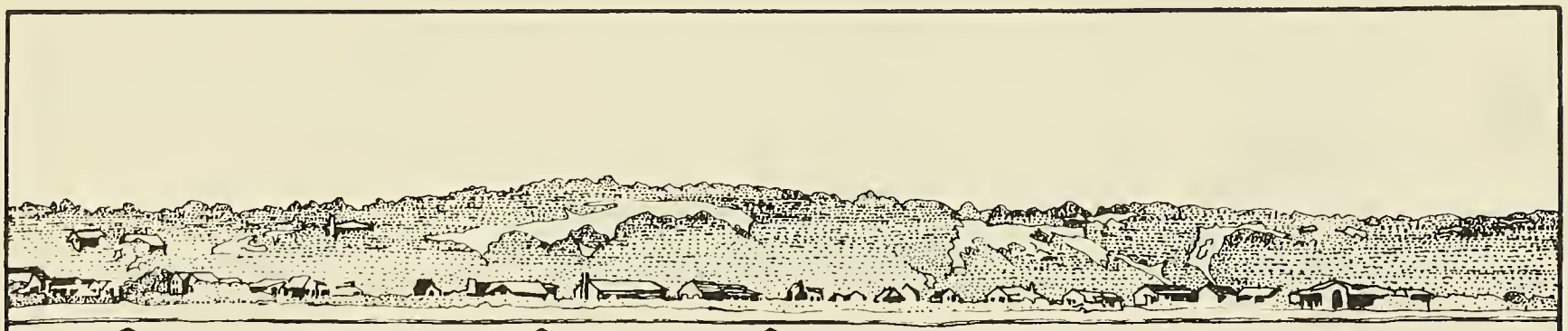
EXAMPE FROM NEW HAVEN 3, PHOTO 8-26

Prepared for
New England River Basin Comm.
under a grant to
National Park Service
by
Natural and Historic Resource Assc
313 S. 16th st., Philadelphia, Pa

FREQUENCY
20
LENGTH
25.8 MILES

FLATLAND WITH SCATTERED DEVELOPMENT / INDUSTRIAL

COASTAL LANDSCAPE PATTERN **9**



DENSE RESIDENTIAL DEVELOPMENT OCCURS IN SINGLE LINE ALONG WATER

PREDOMINANTLY SEASONAL HOUSING

SOME DEVELOPMENT ALONG RIDGE

EXAMPLE FROM MATTITUCK HILLS 2, PHOTO 4-5

New England River Basin Comm
National Park Service
Natural and Historic Resource Assc
313 S 16th st Philadelphia Pa

FREQUENCY
17
LENGTH
22.3 MILES

BLUFF WITH DENSE DEVELOPMENT

COASTAL LANDSCAPE PATTERN **10**

RISE TENDS TO BE LOW IN HEIGHT AND HAVE A GENTLE SLOPE

DENSE RESIDENTIAL DEVELOPMENT OCCURS IN SINGLE OR DOUBLE LINE ALONG SHORE

ORNAMENTAL PLANTING COMMON

LARGE NUMBER OF DOCKS AND MOORINGS FOR SMALL BOATS

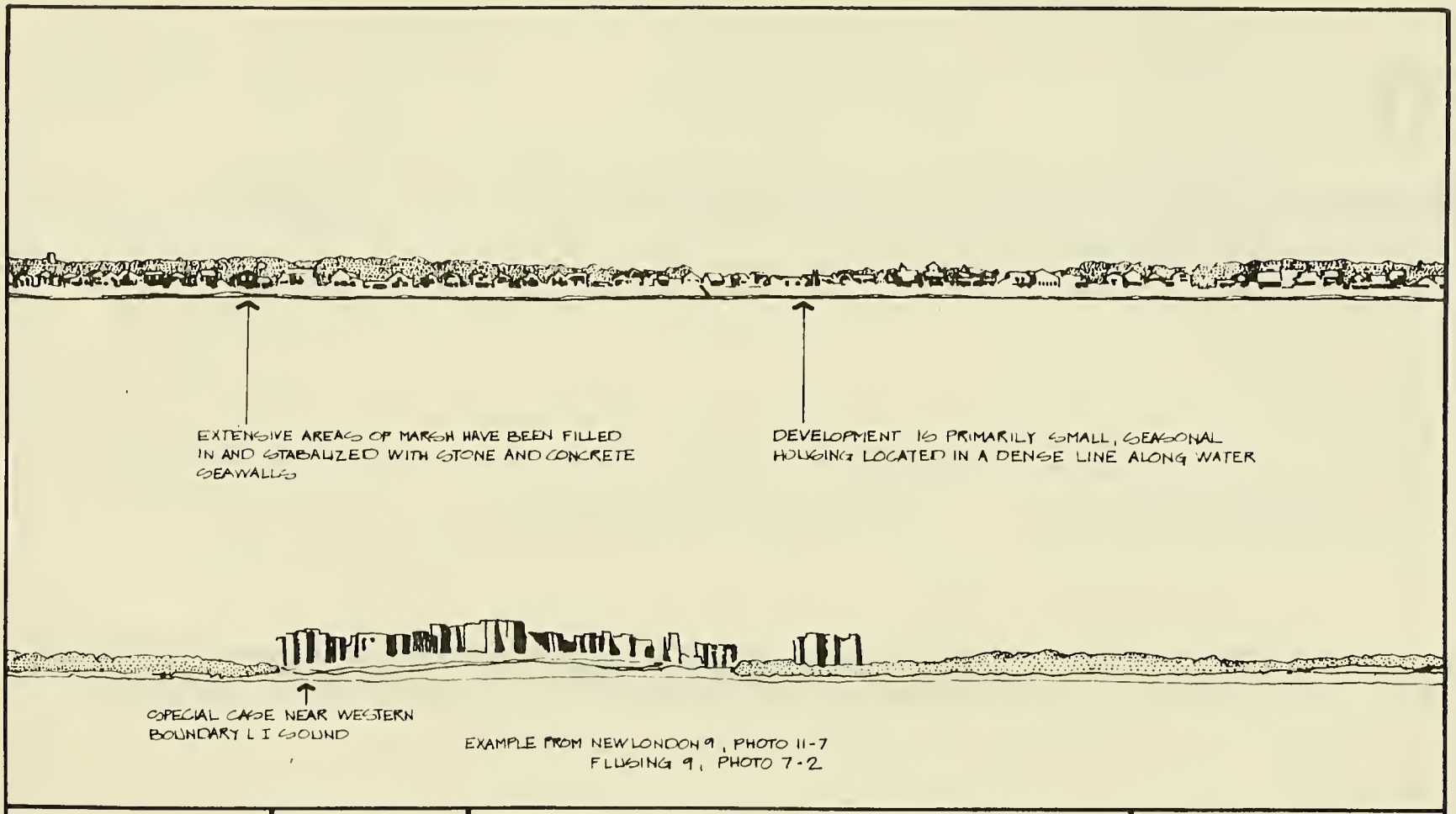
EXAMPLE FROM NEW LONDON 2 , PHOTO 10-25

prepared for
New England River Basin Comm.
under contract to
National Park Service
by
Natural and Historic Resource Assc.
313 S. 16th st., Philadelphia, Pa

FREQUENCY
29
LENGTH
43 8 MILES

RISE WITH DENSE DEVELOPMENT

COASTAL LANDSCAPE PATTERN **11**


EXTENSIVE AREAS OF MARSH HAVE BEEN FILLED IN AND STABALIZED WITH STONE AND CONCRETE SEAWALLS
DEVELOPMENT IS PRIMARILY SMALL, SEASONAL HOUSING LOCATED IN A DENSE LINE ALONG WATER
SPECIAL CASE NEAR WESTERN BOUNDARY L I SOUND
EXAMPLE FROM NEW LONDON 9, PHOTO 11-7
FLUSING 9, PHOTO 7-2

prepared for
New England River Basin Comm
under contract to
National Park Service
by
Natural and Historic Resource Assc.
313 S. 16th st., Philadelphia, Pa.

FREQUENCY
34
LENGTH
49.8 MILES

FLATLAND WITH DENSE DEVELOPMENT

COASTAL LANDSCAPE PATTERN **12**

VISUAL IMPACT OF LARGE BUILDINGS REDUCED WHERE THERE IS VEGETATIVE COVER

BUILDINGS AND TOWERS ABOVE THE TREE LINE DOMINATE THE PATTERN

DEVELOPMENT APPEARS TO CLUSTER ON HILLS

SHORELINE ALMOST ENTIRELY DOCKS, PIERS AND SEAWALLS

EXAMPLE FROM NEW LONDON 4, PHOTO 1C-3C

prepared for
New England River Basin Comm.
under
National Park Service
by
Natural and Historic Resource Assc
313 S 16th st Philadelphia, Pa

FREQUENCY
5
LENGTH
11 6MILES

RISE WITH DENSE DEVELOPMENT/INDUSTRIAL

COASTAL LANDSCAPE PATTERN **13**

TALL BUILDINGS AND TOWERS DOMINATE

DEVELOPMENT APPEARS 'FORMLESS', SCATTERED ALONG SHORE

OCCASSIONAL PATCHES OF MARSH STILL EXIST BETWEEN SEAWALLS

EXAMPLE FROM NEW HAVEN 2, PHOTO 8-23

Prepared for:
New England River Basin Comm
under contract to:
National Park Service
by:
Natural and Historic Resource Assc.
313 S 16th st Philadelphia, Pa

FREQUENCY
13
LENGTH
354 MILES

FLATLAND WITH DENSE DEVELOPMENT/INDUSTRIAL

COASTAL LANDSCAPE PATTERN **14**

APPENDIX C DETAILED EVALUATION OF ALTERNATIVE MEASURES

EVALUATION CRITERIA	NOTES	Acquire lands and easements in high priority scenic areas	Land use & design controls in scenic areas	Combined acquisition & regulation	Rely on existing acquisition & regulation actions	Acquire title & dev't rights to lands in corridor areas	Land use & design controls in corridor areas	Combined acquisition & regulation	Rely on existing acquisition & regulation actions	Adopt mandatory design standards for all decisions	Adopt mandatory standards for regional impact projects	Rely on advisory criteria	Rely on existing standards	Fund programs to protect "scenic townscapes"	Expand scope of historic preservation legislation	Rely on existing tools
ENVIRONMENTAL CRITERIA																
ENVIRONMENTAL QUALITY	1															
Natural beauty	2	++	+	++	0	++	+	++	0	++	+	0	0	+	+	0
Land erosion/sediment		+	+	+	0	+	+	+	0	0	0	0	0	0	0	0
Water/water quality	3	+	+	+	0	+	+	+	0	0	0	0	0	0	0	0
Air/air quality	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ECOLOGICAL SYSTEMS	4															
Terrestrial																
Plants		++	+	++	0	++	+	+	0	+	+	0	0	0	0	0
Animals		++	+	++	0	++	+	+	0	+	+	0	0	0	0	0
Aquatic																
Plants		+	+	+	0	+	+	+	0	+	0	0	0	0	0	0
Animals																
anadromous		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
resident																
cold water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
warm water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SCENIC RESOURCES																
Archaeological/historical	5	++	+	++	-	++	+	++	-	+	+	0	0	++	+	0
Biological	6	++	+	++	-	++	+	+	-	+	+	0	0	0	0	0
Geological	7	++	+	++	-	++	+	+	=	+	+	0	0	0	0	0
IRREVERSIBLE COMMITMENTS	8	0	0	0	=	0	0	0	=	0	0	0	0	0	0	-
SUMMARY ENVIRONMENTAL RATING	9	GOOD	GOOD	GOOD	POOR	GOOD	GOOD	GOOD	POOR	GOOD	GOOD	FAIR	FAIR	GOOD	GOOD	FAIR
ECONOMIC CRITERIA	10															
BENEFITS	11	BROAD	MED	BROAD	TREND	BROAD	MED	BROAD	TREND	BROAD	BROAD	MED	TREND	BROAD	MED	TREND
Annual benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COSTS	12	HIGH	HIGH	HIGH	MED	HIGH	MED	HIGH	MED	HIGH	HIGH	MED	LOW	HIGH	HIGH	MED
Present worth		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENEFIT/COST RATIO		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER																
Jobs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Population		+	+	+	—	+	+	+	—	0	0	0	0	+	0	0
Economic base/stability		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental desirability		++	++	++	—	++	++	++	—	++	+	+	0	++	+	—
SUMMARY ECONOMIC RATING	9	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	FAIR	FAIR	GOOD	FAIR	FAIR
SOCIAL CRITERIA																
REAL INCOME DISTRIBUTION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Primary incidence/benefits	13	PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	PUBLIC OWNERS	TREND
Primary incidence/costs		PUBLIC	OWNERS	PUBLIC OWNERS	PUBLIC OWNERS	PUBLIC	OWNERS	PUBLIC OWNERS	TREND	OWNERS	OWNERS	OWNERS	TREND	PUBLIC OWNERS	PUBLIC OWNERS	TREND
LIFE, HEALTH, AND SAFETY	14	+	+	+	0	+	+	+	0	0	0	0	0	+	+	0
EDUC., CULT., RECREATIONAL		++	+	++	0	++	+	+	0	+	+	0	0	+	+	0
EMERGENCY PREPAREDNESS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy conservation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABILITY TO MEET OTHER NEEDS	15															
Land use		++	++	++	—	++	++	++	—	+	+	0	0	+	0	0
Water quality		+	+	+	0	+	+	+	0	0	0	0	0	0	0	0
Water supply		+	0	+	0	0	0	0	0	0	0	0	0	0	0	0
Shoreline appearance/design		++	++	++	-	++	++	++	-	++	+	0	-	++	++	0
Erosion/sedimentation		+	+	+	-	+	+	+	-	0	0	0	-	0	0	0
Flood damage reduction		+	+	++	-	+	+	+	-	0	0	0	0	0	0	0
Recreation		++	0	+	0	+	+	+	0	0	0	0	0	0	0	0
Fish/wildlife		+	+	+	0	+	+	+	0	0	0	0	0	0	0	0
Transportation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minerals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEGAL-JUDICIAL INVOLVEMENT	16	0	-	0	0	-				-	-	0	0	-	0	0
INSTITUTIONAL																
Agencies primarily responsible		STATE/LOCAL	STATE/LOCAL	STATE/LOCAL	STATE/LOCAL	STATE	STATE/LOCAL	STATE/LOCAL	LOCAL	STATE/LOCAL	REGIONAL/STATE	STATE	LOCAL	STATE	STATE/LOCAL	LOCAL
Ease of administering		+	-	+	+	-	-	-	+	-	-	++	++	-	+	++
Preferability/non-federal action	17	0	++	+	0	0	++	+	0	++	++	0	0	+	0	0
POLITICAL																
Ease of creating institutions	18	++	-	+	0	-	-	-	0	-	-	+	0	-	0	0
Ease of passing law	18	0	-	-	0	-	-	-	0	-	-	+	0	-	0	0
OTHER																
Community continuity		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental	19	++	++	++	0	++	+	++	0	++	+	0	-	++	+	-
Years to implement		5-10	0-5	0-5	0	0-5	0-5	0-5	0	0-5	0-5	0-5	0	0-5	0-5	0
SUMMARY	9	GOOD	FAIR	GOOD	POOR	GOOD	GOOD	GOOD	POOR	GOOD	GOOD	FAIR	FAIR	GOOD	GOOD	FAIR
APPLICABILITY	20	ACQ	REG	COMP	NONE	ACQ	REG.	COMP	NONE	REG	REG	REG	NONE	REG	REG	NONE

EVALUATION CRITERIA	NOTES	Acquire & redevelop deteriorated urban areas	Adopt new zoning & subdivision controls	Fund new programs for owner rehabilitation	Combined acquisition & regulation	Rely on existing levels of action	Acquire & redevelop major system areas	Use codes & regulations to compel rehabilitation	Combined acquisition and regulation	Encourage owner rehabilitation	Rely on existing tools	Enforce mandatory design standards for major facilities	Rely on advisory standards & voluntary action only	Rely on existing tools	Acquire & redevelop harborsides	Use new forms of regulation	Combined acquisition & regulation	Rely on existing tools
ENVIRONMENTAL CRITERIA																		
ENVIRONMENTAL QUALITY	1																	
Natural beauty	2	+	+	+	+	0	+	+	+	+	-	+	+	-	++	++	++	0
Land erosion/sediment		0	0	0	0	0	+	0	+	0	0	0	0	0	+	+	+	0
Water/water quality	3	0	0	0	0	0	+	+	+	0	-	0	0	0	++	+	++	0
Air/air quality	3	0	0	0	0	0	+	+	+	0	-	0	0	0	0	0	0	0
ECOLOGICAL SYSTEMS	4																	
Terrestrial																		
Plants		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Animals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aquatic																		
Plants		0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	-
Animals																		
anadromous		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
resident																		
cold water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
warm water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SCENIC RESOURCES																		
Archaeological/historical	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological	6	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	-
Geological	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IRREVERSIBLE COMMITMENTS	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMARY ENVIRONMENTAL RATING	9	GOOD	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	FAIR	POOR	FAIR	FAIR	POOR	GOOD	GOOD	GOOD	POOR
ECONOMIC CRITERIA																		
	10																	
BENEFITS	11	MED	MED	MED	MED	TREND	MED	MED	MED	MED	TREND	BOOD	MED	TREND	BOOD	BOOD	BOOD	TREND
Annual benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COSTS	12	MED	HIGH	MED	MED	MED	HIGH	HIGH	HIGH	MED	LOW	MED	LOW	LOW	HIGH	MED	HIGH	LOW
Present worth		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENEFIT/COST RATIO		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER																		
Jobs		0	+	0	+	0	0	0	0	0	0	0	0	0	+	0	+	0
Population		+	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Economic base/stability		0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental desirability		+	++	+	++	-	++	++	++	+	-	++	+	0	++	++	++	-
SUMMARY ECONOMIC RATING	9	FAIR	GOOD	FAIR	GOOD	POOR	FAIR	FAIR	FAIR	FAIR	POOR	FAIR	FAIR	FAIR	GOOD	GOOD	GOOD	POOR
SOCIAL CRITERIA																		
REAL INCOME DISTRIBUTION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Primary incidence/benefits	13	PUBLIC OWNERS	PUBLIC OWNERS	PUBLIC OWNERS	PUBLIC OWNERS	TREND	PUBLIC OWNERS	PUBLIC OWNERS	PUBLIC OWNERS	PUBLIC OWNERS	TREND	PUBLIC	PUBLIC	TREND	PUB. OWNERS	PUB.	PUBLIC OWNERS	TREND
Primary incidence/costs		OWNERS	PUBLIC	PUBLIC OWNERS	PUBLIC OWNERS	TREND	PUBLIC	OWNERS	OWNERS	OWNERS	TREND	OWNERS	OWNERS	TREND	PUB	OWN.	PUBLIC OWNERS	TREND
LIFE, HEALTH, AND SAFETY	14	+	+	0	+	0	+	+	+	0	0	+	+	0	+	+	+	0
EDUC., CULT., RECREATIONAL		+	+	0	+	0	++	0	+	0	-	0	0	0	++	+	++	-
EMERGENCY PREPAREDNESS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy conservation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABILITY TO MEET OTHER NEEDS	15																	
Land use		+	+	0	+	0	++	+	+	0	0	0	0	0	+	+	+	0
Water quality		0	0	0	0	0	++	++	++	0	-	0	0	0	+	+	+	-
Water supply		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shoreline appearance/design		++	++	+	++	0	++	++	++	+	-	++	++	-	++	++	++	-
Erosion/sedimentation		0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0
Flood damage reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	+	0
Recreation		0	0	0	0	0	++	0	+	0	-	0	0	0	++	+	+	0
Fish/wildlife		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minerals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEGAL/JUDICIAL INVOLVEMENT	16	0	0	0	0	0	-	-	-	0	0	=	0	0	0	-	-	0
INSTITUTIONAL																		
Agencies primarily responsible		STATE LOCAL	LOCAL STATE LOCAL	STATE LOCAL	LOCAL STATE LOCAL	0	LOCAL	STATE LOCAL	STATE LOCAL	STATE LOCAL	LOCAL	DISTRICT STATE	LOCAL	STATE LOCAL	STATE LOCAL	STATE LOCAL	STATE LOCAL	LOCAL
Ease of administering		+	-	0	+	0	+	-	-	++	++	-	+	++	0	-	-	0
Preferability/non-federal action	17	++	-	0	++	0	+	++	++	++	0	++	0	0	0	++	+	0
POLITICAL																		
Ease of creating institutions	18	-	-	0	-	0	+	0	0	0	0	-	+	0	0	-	-	0
Ease of passing law	18	-	-	0	-	0	+	0	0	0	0	-	+	0	0	-	-	0
OTHER																		
Community continuity		0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental	19	+	++	+	++	0	++	+	++	+	-	+	+	-	++	+	+	-
Years to implement		0-5	5-10	0-5	5-10	0	0-5	0-5	0-5	0-5	0	0-5	0-5	0	0-5	0-5	0-5	0
SUMMARY	9	GOOD	GOOD	FAIR	GOOD	FAIR	GOOD	GOOD	GOOD	GOOD	POOR	FAIR	GOOD	FAIR	GOOD	GOOD	GOOD	POOR
APPLICABILITY	20	REG	ACQ	NONE	COMP.	NONE	ACQ	REG	COMP	NONE	NONE	REG	REG	NONE	ACQ	REG	COMP	NONE

EVALUATION CRITERIA	NOTES	Acquire lands & easements to protect viewpoints	Use regulations to protect scenic views	Combined acquisition & regulation	Rely on existing tools	Acquire lands & easements for shore access	Require access through regulation	Combine acq & reg to create greenspace system	Rely on existing acquisition & regulatory actions	Acquire lands & easements in highway corridors	Regulate types & appearance of land uses in corridors	Combine acquisition & regulation	Rely on existing tools	Fund intensive informational programs	Develop programs in schools/cultural institutions	Combine intensive programs & public education	No new public action
ENVIRONMENTAL CRITERIA																	
ENVIRONMENTAL QUALITY	1																
Natural beauty	2	+	+	+	0	+	0	++	0	+	+	+	0	0	0	0	0
Land erosion/sediment		0	0	0	0	+	0	+	0	0	0	0	0	0	0	0	0
Water/water quality	3	0	0	0	0	+	0	+	0	0	0	0	0	0	0	0	0
Air/air quality	3	0	0	0	0	0	0	0	0	+	+	+	0	0	0	0	0
ECOLOGICAL SYSTEMS	4																
Terrestrial																	
Plants		+	0	+	0	0	0	+	0	+	0	+	0	0	0	0	0
Animals		+	0	+	0	0	0	+	0	+	0	+	0	0	0	0	0
Aquatic																	
Plants		+	0	+	0	0	0	+	0	0	0	0	0	0	0	0	0
Animals																	
anadromous		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
resident																	
cold water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
warm water		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SCENIC RESOURCES																	
Archaeological/historical	5	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
Biological	6	+	0	+	0	0	0	+	0	+	0	+	0	0	0	0	0
Geological	7	+	0	+	0	0	0	+	0	0	0	0	0	0	0	0	0
IRREVERSIBLE COMMITMENTS	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUMMARY ENVIRONMENTAL RATING	9	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	GOOD	FAIR	FAIR	FAIR	FAIR	FAIR
ECONOMIC CRITERIA	10																
BENEFITS	11	MED	MED	MED	TREND	BROAD	MED	BROAD	TREND	BROAD	BROAD	BROAD	TREND	BROAD	MED	BROAD,	TREND
Annual benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External benefits		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COSTS	12	MED	MED	MED	LOW	MED	LOW	HIGH	LOW	HIGH	MED.	HIGH	LOW	MED	MED	HIGH	LOW
Present worth		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
External costs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENEFIT/COST RATIO		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER																	
Jobs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Population		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Economic base/stability		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental desirability		+	+	+	0	+	+	++	0	+	+	+	-	++	++	++	0
SUMMARY ECONOMIC RATING	9	FAIR	FAIR	FAIR	FAIR	FAIR	FAIR	GOOD	FAIR	GOOD	GOOD	GOOD	FAIR	FAIR	FAIR	FAIR	FAIR
REAL INCOME DISTRIBUTION		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Primary incidence/benefits	13	PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	PUBL	PUBLIC	TREND	PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	PUBLIC	PUBLIC	TREND
Primary incidence/costs		PUBLIC	PUBLIC	PUBLIC	TREND	PUBLIC	OWNERS	PUBLIC OWNERS	TREND	PUBLIC	OWNERS	PUBLIC OWNERS	PUBLIC	PUBLIC	PUBLIC	PUBLIC	0....
SOCIAL CRITERIA																	
LIFE, HEALTH, AND SAFETY	14	+	+	+	0	+	+	+	0	+	+	+	0	+	+	+	0
EDUC., CULT., RECREATIONAL		+	0	+	0	+	+	+	0	0	0	0	0	++	++	++	-
EMERGENCY PREPAREDNESS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy conservation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ABILITY TO MEET OTHER NEEDS	15																
Land use		0	0	0	0	+	+	++	0	+	+	+	0	0	0	0	0
Water quality		0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0
Water supply		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shore line appearance/design		++	+	+	0	+	+	++	-	+	+	+	0	+	+	+	0
Erosion/sedimentation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flood damage reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recreation		+	0	+	0	+	+	++	0	0	0	0	0	0	0	0	0
Fish/wildlife		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minerals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LEGAL/JUDICIAL INVOLVEMENT	16	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0
INSTITUTIONAL																	
Agencies primarily responsible		STATE LOCAL	STATE LOCAL	STATE LOCAL	LOCAL	STATE LOCAL	STATE LOCAL	STATE LOCAL	0	STATE LOCAL	LOCAL	STATE LOCAL	0	STATE FED + LOCAL	LOCAL NON-PROFIT	STATE FED LOCAL	0
Ease of administering		+	++	+	0	+	-	-	0	+	-	-	0	++	++	++	0
Preferability/non-federal action	17	0	-	-	0	-	++	-	0	-	++	0	0	0	0	0	0
POLITICAL																	
Ease of creating institutions	18	0	-	-	0	0	0	-	0	+	0	+	0	0	+	+	0
Ease of passing law	18	0	-	-	0	0	-	-	0	0	0	0	0	0	0	0	0
OTHER																	
Community continuity		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental	19	+	+	+	0	+	+	+	0	+	+	++	0	0	0	0	0
Years to implement		0-5	0-5	0-5	0	0-5	0-5	0-5	0-5	0-5	0-5	5-10	0	0-5	0-5	5-10	0
SUMMARY	9	GOOD	FAIR	GOOD	FAIR	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	FAIR
APPLICABILITY	20	ACQ	REG	COMP	NONE	ACQ	REG	COMP.	NONE	ACQ	REG	COMP	NONE	NONE	NONE	COMP	NONE

NOTES

1. Environmental criteria are described in terms of beneficial effects. Adverse effects should be read as the converse of each statement.

2. Natural beauty benefits result from the protection, enhancement, or creation of open and green space, wild and scenic rivers, lakes, beaches, shores, mountains and wilderness areas, estuaries or other areas of natural beauty.

3. Water and air quality benefits are reductions in the contaminants in the water and the air, without regard (in this row) for the effects of these reductions on other criteria.

4. Benefits to an ecological system reflect broad judgments as to the most likely overall long-term and widespread effects on the system under consideration. Alternatives related to preservation of natural areas will have direct beneficial effects on terrestrial and, to a lesser extent, on aquatic ecosystems.

5. Archaeological benefits are highly site specific. Historic scenic resources, on the other hand, can include entire towns, groups of buildings, or industrial or commercial areas which contribute to the region's historic character. Many of the alternatives are directly related to the preservation of such areas.

6. Biological benefits are interpreted as increased opportunities to preserve rare and endangered species and the ecological systems upon which they depend. The alternatives which deal with acquisition and protection of scenic natural areas are generally rated high in this area.

7. Geological benefits are the preservation of resources of outstanding geologic or geomorphologic significance so as to contribute to man's knowledge and appreciation of his physical environment. While direct preservation efforts may have direct effects, the effects of most measures are minor.

8. Irreversible commitments were generally inapplicable to the Shoreline Appearance and Design alternative meaures, which largely dealt with preservation and design controls. Irreversible commitments were rated negatively, however, in the cast of status quo alternatives; if scenic areas are developed, reclamation and preservation are made much more difficult, if not impossible.

9. Summary ratings for environmental, economic and social criteria are expressed as GOOD, FAIR, and POOR, depending upon the preponderance of other relevant entries in the table. Areas in which effects were all rated to be of minimal impact were rated FAIR.

10. Since shoreline appearance and design alternatives are not project-oriented, but involve policy decisions, regulatory actions and protection programs whose costs and benefits may extend over time, only a generalized economic analysis was conducted.

11. Benefits were interpreted in terms of spread of benefits across public and private interests: BROAD (benefits affecting the regional economy in terms of attraction of residents, tourists and industries over a long-term), MEDIUM (benefits affecting local economies in terms of shop-keepers, property owners and residents in the short-term), and TREND (perpetuation of existing economic patterns).

12. Costs were rated in terms of HIGH ($1 million and over), MEDIUM ($100,000 - $1 million), and LOW ($0 - $99,999). Many of the alternatives involve long range, continuing programs of acquisition or regulation whose costs will be spread over time; these figures represent costs corresponding to the time frame listed under "Years to Implement".

13. Benefits generally accrue to the public - residents, tourists, business-men, etc. In several instances, owners may benefit through government purchase of their lands or through increases in property values brought about through improvements made as a result of regulation, rehabilitation loans, or other measures. TREND indicates distribution of benefits/costs under current programs.

14. Beneficial effects include: 1) aesthetic improvements which contribute in general to the quality of life; 2) preservation of open lands and long-term reductions in pollution and incidence of eyesores, which contribute to the public safety and health.

15. Listed here are subjects addressed in the ten LISS planning reports; one has been subdivided into water quality and water supply. An entry reflects a judgment as to whether the net effects of an alternative will complement (+) or conflict (-) with the listed planning report. In general, shoreline appearance and design alternatives show a high degree of correlation with land use, recreation, and fish and wildlife planning reports.

16. A "0" rating reflects the judgment that implementation of the program will require insignificant judicial involvement. A "=" rating indicates severe judicial problems. In the case of shoreline appearance and design alternatives, legal problems would be most likely to revolve around the issue of taking private property (through regulation, design controls, etc.) without compensation to owners.

17. Positive ratings are given where non-federal (state, county, local) action is recommended. In many cases, federal funding to lower levels of government is recommended; in this case a (-) rating is given.

18. If a new institution (new law or new authorization) is not required or

if required would present little difficulty, a "O" is entered. A rating of "=" indicates that a new institution or law would be required and its creation or passage would present severe difficulties.

19. This category includes contributions to appearance and design affecting both the natural and the man-made environment.

20. Measures included in the maximum acquisition plan are indicated by "ACQ"; measures included in or related to the maximum regulation plan are indicated by "REG"; measures included in the composite plan are indicated by "COMP". Status quo recommendations, and those not falling into either of the three plans are indicated by "NONE".

APPENDIX D

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Primary responsibility for these planning reports rests with the chair agency indicated above. The other agencies and individuals listed participated either in an active, a review, or an advisory role, but their listing here does not necessarily imply an endorsement of the report in whole or in part.